

# USER MANUAL PSPC

PSPC30

PSPC5








PSPC7

Prinzen B.V.  
Weverij 18  
7122 MS AALTEN  
P.O. Box 85  
7120 AB AALTEN  
NEDERLAND

Website: [www.prinzen.com](http://www.prinzen.com)



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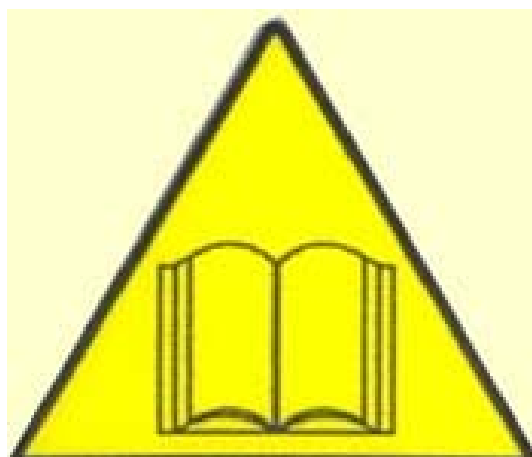
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# **INTRODUCTION**

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**CAUTION:**

This manual must be read by or to each person, before that person operates, cleans, repairs, supervises the operation of, or uses this machine in any way.

**CAUCION:**

Este manual debe ser leído por a cada persona antes de comenzar a operar, limpiar, reparar, supervisar la operación de, o utilizar esta maquina de cualquier manera.

**ATTENTION:**

Ce manuel doit être lu par, ou a, toute personne avant qu'elle ne mette en route, nettoie, répare, supervise le fonctionnement ou utilise cette machine, de quelque manière que ce soit.

**VORSICHT:**

Jeder, der diese Maschine bedienen, reinigen, reparieren, überwachen oder auf irgendeine Weise benutzen soll, muß vorher diese Hinweise lesen oder vorgelesen bekommen.

**ATTENTIE:**

Een ieder, die deze machine bedient, reinigt, repareert, controleert of op enige andere wijze gebruiken zal, dient vooraf deze bedieningsvoorschriften te lezen.



## **LIABILITY**

Prinzen BV cannot be held responsible for any costs, damage or personal injury if it's system is not used in accordance with the instructions as described in this manual.

The information provided in this manual is valid for the standard design of the system. Parts of your system may differ from this standard design.

Since Prinzen BV is constantly improving its systems it may be possible that there are small differences between your system and this manual.

Though this manual has been put together with the utmost care, Prinzen BV cannot accept any responsibility for costs, damage or personal injury arising from any fault and/or incompleteness in the content of this document.

## **GENERAL**

This manual contains important information concerning safety, operation, adjustment, maintenance, cleaning and repair of the Prinzen BV system. For uncomplicated functioning of the system, read this manual carefully and work according to the directions in this manual.

Beside the design and the used materials also the operation and maintenance have great impact on the functioning, the life span and the operational costs of our system. You, as the owner of the system, are responsible for the execution of maintenance according to the directions and the intervals in this manual.

This manual will help you to gain knowledge to use the system as it should be used: Correct operated and excellent maintained.

A Prinzen BV system meets the demands, mentioned in the European machine guideline (CE).



## **COPYRIGHT**



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All rights rest with Prinzen BV, Aalten, The Netherlands.

Written by Visser Machine Services.

## GENERAL

This manual contains important information concerning safety, operation, cleaning, maintenance and breakdown remedies.

At all time this manual must be accessible for all personnel working with the system. Keep it in a permanent place, close to the system. When the manual is lost or damaged, order a new copy as soon as possible.

The user of the system should read and understand the total user manual before operating, cleaning, maintaining and repairing the system.

Never change the sequence of procedures as described in this manual.

Beside this manual also knowledge about the installation and adjustments of the system may be helpful for communication with the Prinzen service department or dealer. This information is described in the English-language service manual, which is also delivered with this system.

## SAFETY REGULATIONS

Before starting operation, cleaning, maintaining the system or before remedying breakdowns first read this chapter and chapter **Safety**.

## LEGAL REGULATIONS

- All safety directions stated in this manual must be observed.
- Along with the safety regulations in this chapter the instructions of the qualified trade organization of your country must be observed to avoid accidents.
- Before starting to repair or maintain the machine always consult your safety manager to discuss if a work permit is required for this job.
- All safety devices in the machine and the safety indications mentioned in this manual are conditions to control the machine safely. The owner and his qualified personnel are in the end the ones responsible for the safe use of the machine.
- The owner is responsible for the ability of the qualified personnel to perform its duties according to the safety measures.
- Technical changes, which influence the safety working of the machine, may only be executed by the service department of Prinzen.
- Do not change controls, and/or PLC programs, without written permission from Prinzen because this may affect the safety of the machine.
- Only use genuine Prinzen parts or CE-certified parts for replacement.
- Prinzen cannot be held responsible for any consequential damages to the system or other installations that were caused by technical changes, unprofessional maintenance and repairs on our system, which were executed by the customer.
- Warranty becomes invalid when consequential damages to the system, caused by technical changes, unprofessional maintenance and repairs, were executed by the customer.



### **DANGER!**

Failure to obey legal regulations may result in permanent personal injury or death.



### **ATTENTION!**

Failure to obey legal regulations may result in damage to the system.

## HOW TO USE THIS MANUAL?

The manual is constructed to provide a maximum amount of information with a minimum amount of searching. The key to easy reference is the Table of contents. Familiarize yourself with it and you won't have any trouble locating information from any area of machine.

## WHO SHOULD USE THIS MANUAL?

### Owner:

The owner (contractor, concern) is the person that owns or hires the machine and puts this machine into production. The owner must take care that the users of the system will read the manual.

### Operator:

The operator is the person who operates the system as ordered by the owner. The operator must read the chapters **Introduction**, **Safety**, **Machine description**, **Operation**.

### Professional:

A professional is someone who can assess the duties appointed to him on account of his education, knowledge and experience and who can assess the dangers attached, thereby avoiding these dangers.

### Maintenance engineer:

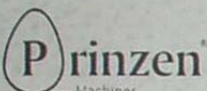
The maintenance engineer is the professional who is deemed qualified by the owner to perform certain duties. The qualification only applies to those assigned duties. The maintenance engineer must read the total manual.


## MANUAL INFORMATION

Machine type:	PSPC
Manual revision:	01 (March 2008)

## SERIAL NUMBER






Each machine has a unique serial number printed on the machine tag, which can be found in the electrical cabinet. Note down this serial number to have it available when contacting the Prinzen service department.

		Weverij 18 7122 MS Aalten Netherlands Tel: ++31(0)543 490060 Fax: ++31(0)543 476205	
Machine type:	PSPC		
Rated voltage:	Hz	V	
Max.prim.fuse:	A		
Serial number:	<input type="text"/>		
Date:	<input type="text"/>		



## SYMBOLS

Symbols are used in the manual when special attention/caution is required while working on the system. The special symbols and their meaning are depicted in the below table.

Symbol:	Meaning:
	<b>DANGER!</b> This symbol is used when instructions should be followed to the letter. If not they may result in permanent personal injury or death.
	<b>CAUTION!</b> This symbol is used when instructions should be followed to the letter. If not they may result in permanent personal injury.
	<b>ATTENTION!</b> This symbol is used when instructions should be followed to the letter. If not they may cause damage to the system.
	<b>NOTE!</b> This symbol advises to use edible products and to work in a hygienically way. Disregarding this advice may cause illness.
	<b>TIP!</b> This symbol is used as a helpful hint to simplify the execution of certain tasks.

## **EG-EXPLANATION OF AGREEMENT**

Concerning the machine standards:

Prinzen B.V.  
Weverij 18  
7122 MS AALTEN  
The Netherlands

Declares on their responsibility:

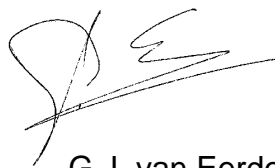
- 1 We are the manufacturer of the egg packing machine:

Brand: Prinzen  
Type: PSPC  
Serial number:

On which this agreement relates:

- 2 The machine is developed in agreement with the demands of the machine standard 98/37/EEG (most recent).
- 3 The machine meets the requirements of the demands of the following EC-standards:  
The low voltage standard 73/23/EEG (most recent).  
The EMC-standards 89/336/EEG (most recent).
- 4 The machine is developed and constructed according the European Standard: EN60204-1: 1993 Electrical equipment of industrial machines.

Signed in: Aalten  
Date:



Signed by: G.J. van Eerden





# **1. SAFETY**

---

## **GENERAL**

Only persons meeting the following requirements are authorized to work with the system. These persons should be:

- Skilled and specifically trained for their duties.
- Familiar with the contents of this manual.
- Familiar with the locations of the emergency buttons and other safety devices.
- 18 years old or above.
- Familiar with the national and regional regulations regarding safety.

These persons should have reached the minimum legal age required to perform this work.

These persons are NOT under influence of any drug, medicine or alcoholic drink.



### **DANGER!**

Keep children and incompetent persons away from the system!

The system is only to be used for the purpose it was designed for. See the chapter **Machine description** for details.



## **SAFETY REGULATIONS**

Do not use the system when safety devices have been removed. This system may contain sharp edged parts, moving parts and rotating parts.

When protective covers are removed, sharp edges and pinch points may be exposed. Use extreme caution and avoid touching or striking these areas with your hands or body because they may cause injuries.

Do not enter parts of your body or objects into openings in the system. This may lead to serious physical injury or damage to the system. It is dangerous to be in, on or under the system while it is operational.

Loosely hanging clothing, wide sleeved clothing, ties, chains or rings are prohibited. Long hair should be worn tied back.

Make sure that there is sufficient light around the machine.

Do not touch or come near moving or rotating parts. Physical contact with these parts is dangerous.

Do not stand or walk on any of the system parts.

Do not work alone on the system. At least one other person should be present

Before starting to clean, maintain or inspect the machine or before remedying breakdowns follow the steps mentioned below:

- Switch off the machine and secure it against accidental switching on.
- Post "Do not switch on" warning sign on the main switch:
- Operate the nearest emergency button.
- Make sure that no components are moving.

Before switching on the machine, you must check the following:

- All safety devices are in place and are functioning.
- No other persons are in, underneath or above the system.
- No tools or objects are in the system.
- No other persons are at risk.

Do not use water to clean electricity cabinets and other electronic components.

For save and easy operation keep the area and floor around the machine clean, free of oil, grease or obstacles. Remove superfluous fat and greasing oil after greasing duties.

When an extension cable is used for power supply, make sure that the cable diameter in relation to the length of the cable is correct. Make sure the cable is completely unrolled

Manual activation of safety switches is forbidden.

When the safety devices are put out of operation, the machine must first be switched off and secured against accidental switching on.

Work inside the electrical cabinet may only be undertaken by skilled personnel like Prinzen service engineers or its dealers service engineers.

Always switch off the main switch before opening electrical cabinets.

After switching off the main switch, parts inside the electrical cabinet remain live for approximately 1 minute. The frequency inverters may hold a high voltage charge during this time. Do not touch parts inside the electrical cabinet as long as displays of frequency inverters are on.

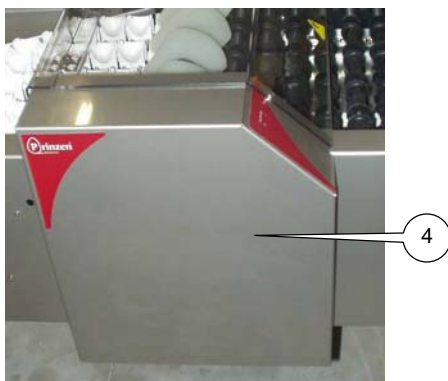
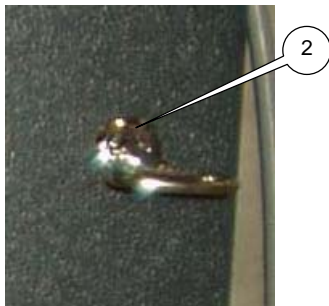
Several parts inside the electrical cabinet maintain voltage even when the main switch is turned off (main switch, main power supply, terminals for egg collecting belts, etcetera).

**DANGER!**

Failure to obey safety regulations may result in permanent personal injury or death.

**ATTENTION!**

Failure to obey safety regulations may result in damage to the system.



## SAFETY PROVISIONS

Before operating the machine the safety devices must be checked for correct functioning. Also the protective covers must be mounted before starting to use the system. Repair or replace safety devices before using the system if they do not work properly. Never rely solely on safety devices. Always switch off the system and lock up the power source (1) before working on the machine.



### **DANGER!**

Protective covers safeguard dangerous machine areas. These covers are of utmost importance to operate the machine safely. Never operate the machine when protective covers are removed because serious injury or death may occur!

## DEFINITION OF SAFETY DEVICES

Safety devices are: lockable doors (2), emergency buttons (3) and protective covers (4).

The emergency button prevents the machine from operating and should stop the machine immediately when it is pressed. Protective covers shield off dangerous moving parts. These covers cannot be removed without tools.

Lockable doors are doors that can only be opened with a key. The key should only be in possession of a supervisor.



### **DANGER!**

Lockable doors safeguard dangerous machine areas. These doors are of utmost importance to operate the machine safely. Never operate the machine when doors are open or not locked because serious injury or death may occur!

## **EMERGENCY BUTTON**

To stop the machine in case of an emergency, the system has one or more emergency buttons. Only use the emergency button in case of an emergency. When the emergency button is pressed, the system stops immediately. The button stays mechanically locked so the machine cannot start until it is considered safe to do so. Release the emergency button by turning it clockwise. Do not release the emergency button when it is not certain why and by whom it was pressed. Personnel working with the system must know the positions of the emergency buttons.

## **SAFETY INSPECTION PROCEDURE**

Before starting the machine all protective covers must be in place, all doors must be closed and emergency buttons must be operating. Trained personnel must check safety devices to assure proper operation.

- 1) Check that all protective covers are in place and all doors are closed.
- 2) Start and stop the system.
- 3) Wait until the system has completely stopped and push an emergency button.
- 4) Push the start button, the machine should not start.
- 5) Pull the emergency button.
- 6) Repeat the above steps 3, 4 and 5 for all emergency buttons.
- 7) Make sure that the machine does not start when any emergency button is pressed.

If the machine operates when an emergency button is pressed, this machine is not safe to operate. Immediately call a qualified technician to repair the defective safety switch or emergency button.

## WARNING LABELS

The Prinzen system makes dangerous movements. The system also contains dangerous parts when they contact the body. The following labels are posted as a warning. Understand and remember the meaning of the warning labels.



### **DANGER!**

Keep the warning labels clean. When labels become unclear, replace them.



The flashlight label is used to warn for dangerous voltage inside a cabinet. Contacting parts inside this cabinet may result in permanent personal injury or death.



This sign is used to warn for dangerous movements. Keep a safe distance to those parts. Disregarding this warning may result in permanent personal injury.



This sign is used to warn for the danger of limbs being pulled in. Keep a safe distance to those parts. Disregarding this warning may result in permanent personal injury.



This sign is used to warn for crushing danger. Keep a safe distance to those parts. Disregarding this warning may result in permanent personal injury.





## **2. MACHINE DESCRIPTION**

## **SAFETY REGULATIONS**

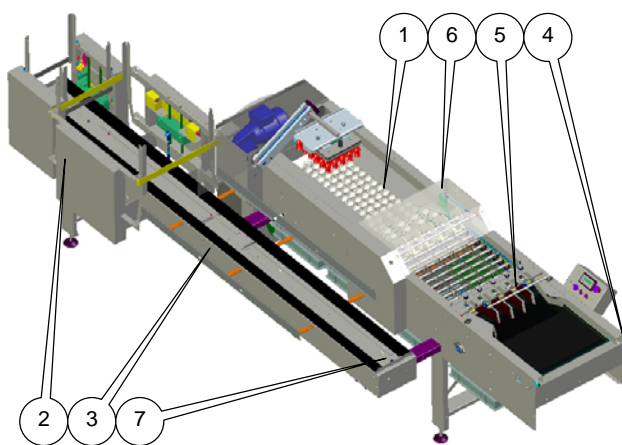
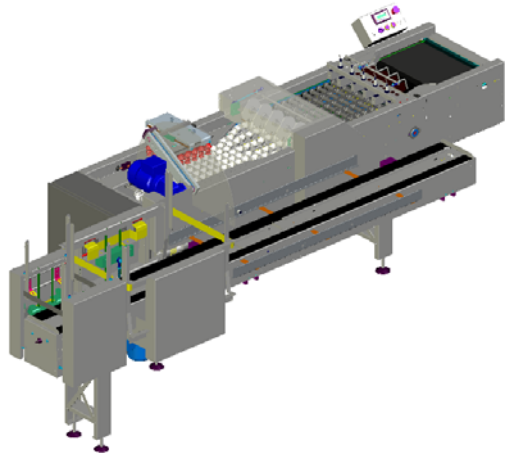
Before starting operation, cleaning, maintaining the system or before remedying breakdowns first read the chapters **Introduction** and **Safety**.



## MACHINE DESCRIPTION

The machine description gives information about the complete system.  
For detailed information of this system see the [Unit description](#) in this chapter.

### PSPC



#### Use:

The Prinzen Special Packer C (PSPC) is designed to pack a random supply of eggs into a wide variety of trays with the pointed end downwards. The PSCP is available in 3 versions: The PSPC30, PSPC5 and PSPC7.

#### PSPC30:

The PSPC 30 is a 5 rows system, packing eggs into 30-cell trays.

#### PSPC5:

The PSPC5 is a 5 rows system packing eggs into 30 cell trays and hatch trays (most common is 150 cell).

#### PSPC7:

The PSPC7 is a 7 rows system packing eggs into 30 cell trays and hatch trays (wide variety of hatch trays).

#### Construction:

The standard PSPC consists of:

- 1 Packer
- 2 Tray denester
- 3 Output conveyor

The following options are available for the PSPC:

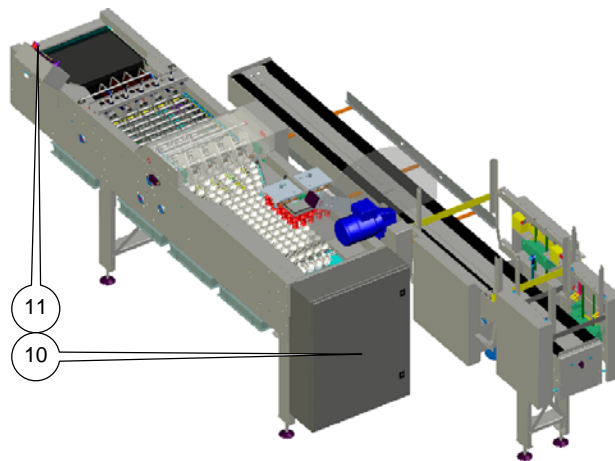
- 4 Infeed extensions
- 5 Egg pattern device
- 6 Printer or Stamping unit
- 7 Easy stacker (PSPC30 only)
- 8 Automatic tray stacker (PSPC30 only)

#### Process:

Eggs are entering the PSPC on the packer that takes care of the pointed end downward setting, assembly of eggs into a fixed pattern and the transfer of those eggs to the tray on the output conveyor.

The tray denester supplies the trays to the outfeed conveyor.

The output conveyor transports empty trays from the tray denester towards the tray set position and full trays towards the removal position of the trays (manual or by a tray stacker)



### Chapters and Manuals:

See below mentioned chapters or manuals for detailed information:

This chapter for unit information.

Chapter **operation** for operation details.

Chapter **maintenance** for cleaning and maintenance information.

Chapter **OvoPrint** for printer information.

Service manual for information about installing and adjusting the system.

### Safety:

The security of the system is created through a balance between safety and workability: An optimal workable situation is created for the operating personnel but safety was kept in mind.

Dangerous movements of the system are mostly protected with protective covers, but there are exceptions. On a lot of places in the system it is possible to sustain injuries. Read the safety instruction of the units in the chapter unit descriptions.

See alongside picture for position of power switch (10) and emergency button (11).



#### CAUTION!

Do not enter objects or body parts into the PSPC when it is running production.

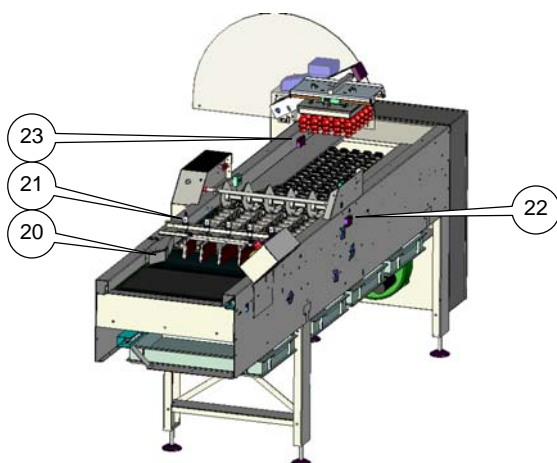
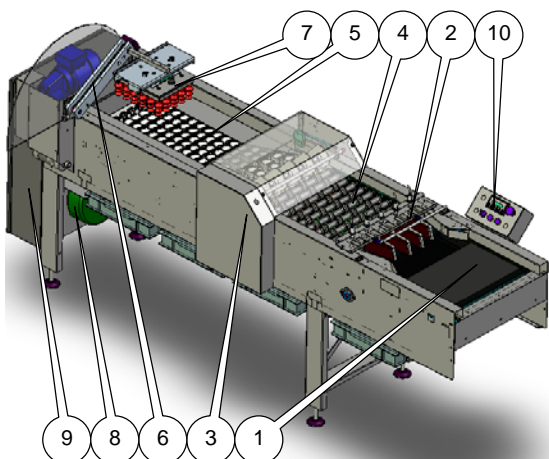
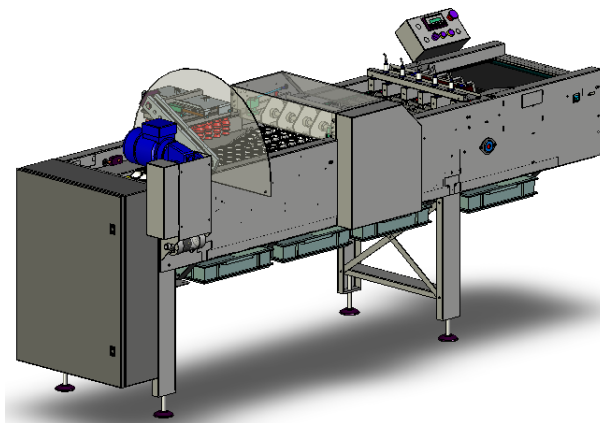


#### ATTENTION!

Do not enter objects or body parts into the PSPC when it is running production.

## UNIT DESCRIPTION

### PACKER



#### Use:

The Packer is designed to receive a random supply of eggs and assemble these eggs into fixed patterns of 25, 30, 36 or 42 eggs and place them with the pointed end downwards into a tray.

#### Construction:

The packer consists of:

- 1 Infeed conveyor
- 2 Infeed gate
- 3 Main drive
- 4 Roller track
- 5 Cup conveyor
- 6 Transfer lever
- 7 Vacuum head
- 8 Vacuum system

Attached to the packer are:

- 9 Electrical cabinet
- 10 Operating panel

#### Process:

Eggs are entering the packer on the infeed conveyor where the eggs may be graded. On this belt oversized-, misshapen-, cracked- or dirty eggs should be manually removed. Egg pressure control switches (20) on the sides of the infeed conveyor prevent accumulation of eggs on the infeed conveyor. The eggs run into the infeed gates where they are detected (21). When all gates have detected an egg, the roller track moves one step forwards receiving the eggs from the gates in between 2 rollers on the roller shafts. Because of the shape of the rollers and their rotating movement, during each step forwards, the eggs move with their pointed ends more towards the outside of the rollers.

At the main drive position, the egg lifters lift the eggs on the round end up while flaps are guiding the pointed end into the cups of the cup conveyor.

A cup detection sensor (22) stops the system when remaining eggs are detected in between the roller track and the cup conveyor.

The cup conveyor transports the eggs towards the transfer lever position until the first line of eggs is detected by the start transfer sensor (23).

The vacuum head on the transfer lever moves down to pick up the eggs and transports them towards an empty tray on the outfeed conveyor.

**Safety:**

The packer is not completely secured with protective covers. Therefore be cautious with loosely hanging clothes and long hair, do not come too close to the packer and do not touch it when it is running production.

Pay special attention to:

- The infeed conveyor
- The roller track
- The cup conveyor
- Flap shaft
- Transfer lever with vacuum head





Never touch these parts of the packer when it is running production.

The cover above the flap shaft (transfer position of eggs from roller track to cup conveyor) doesn't have a safety switch. With an open cover, the system remains running.

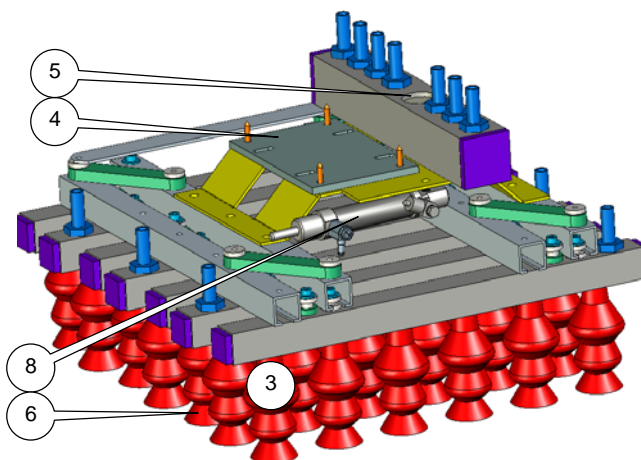
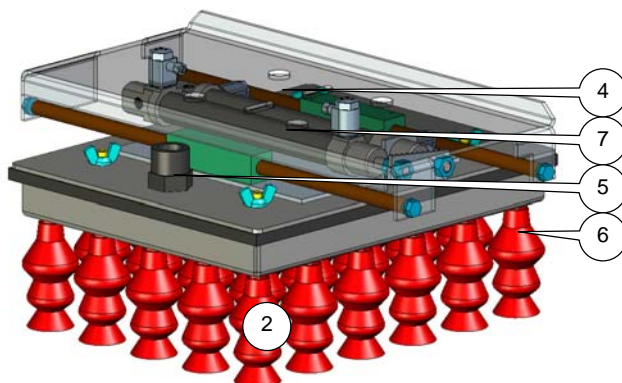
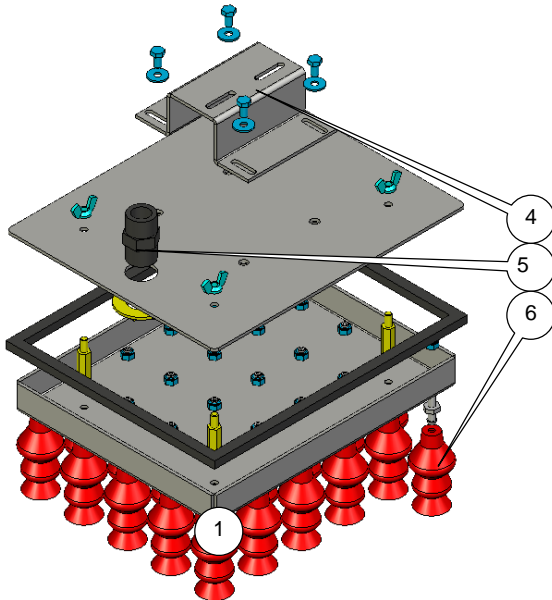
The transfer lever with vacuum head makes unexpected fast and powerful movements.

Never touch or come near this part when the packer is running production.

The cover above the flap shaft (transfer position of eggs from roller track to cup conveyor) doesn't have a safety switch. With an open cover, the system remains running.

	<p><b>CAUTION!</b></p> <p>The cover above the flap shaft is NOT a safety cover. Opening this cover does NOT stop the system.</p>
	<p><b>CAUTION!</b></p> <p>Keep distant to the transfer lever with vacuum head! It makes unexpected fast and powerful movements!</p>
	<p><b>CAUTION!</b></p> <p>Do not enter objects or body parts into the packer when it is running production.</p>
	<p><b>ATTENTION!</b></p> <p>Do not enter objects or body parts into the packer when it is running production.</p>

## VACUUM HEAD



### Use:

The vacuum head is designed to pick up eggs from the cup conveyor and place those eggs into the trays on the output conveyor. The vacuum head is available in 3 versions: Fixed vacuum head, Combination vacuum head and Zigzag vacuum head.

### Fixed vacuum head (1):

The fixed vacuum head is used to place eggs into the common plastic or paper trays.

### Combination vacuum head (2):

The combination vacuum head is used to place eggs into wider trays like trays with a width of 10 eggs.

### Zigzag vacuum head (3):

The zigzag vacuum head is used to place eggs into trays with an offset cell pattern.

### Construction:

The vacuum head consists of:

- 4 Vacuum head holder
- 5 Vacuum hose connection
- 6 Suction cups
- 7 2 air controlled cylinders (combination)
- 8 Air controlled cylinder (zigzag)

The vacuum head is attached to the transfer lever.

### Process:

When eggs are detected at the transfer position, the vacuum head moves towards the eggs. The vacuum is already ON so the suction cups pick up the eggs. The vacuum head moves to the output conveyor above a tray. At this position, the vacuum changes into blow off to place the eggs into a tray.

Above the cup conveyor, the combination vacuum head is in the center position. Above the output conveyor it is able to move to the left or the right for filling both sides of a wider tray.

Above the cup conveyor, the zigzag vacuum head is in the straight cell pattern position. Above the output conveyor it is able to move into the offset cell pattern for filling the offset cell pattern trays.

### Safety:

The vacuum head is not secured with protective covers. It makes unexpected fast and powerful movements. Never touch or come near this part when the packer is running production.

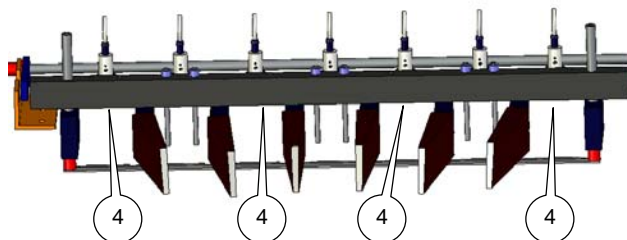
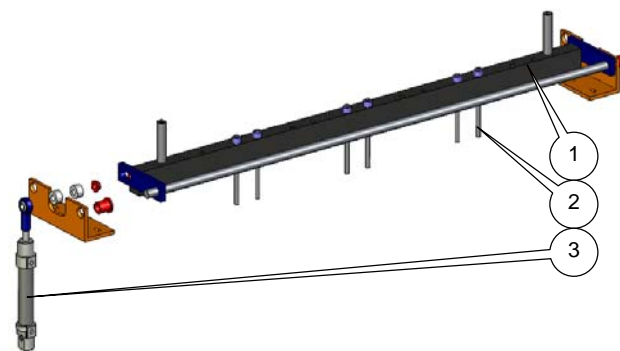
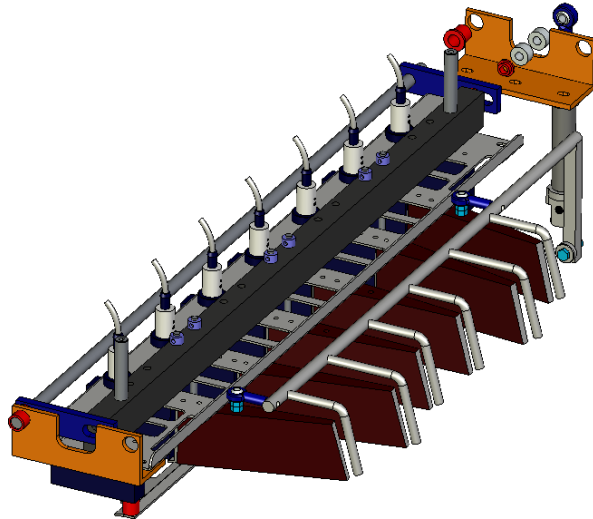


### CAUTION!

Keep distant to the vacuum head! It makes unexpected fast and powerful movements!



## OPTIONAL EGG PATTERN DEVICE



### **Use:**

The egg pattern device is designed for filling trays with an offset cell pattern and an odd number of eggs (for example Jamesway 73, Hatchtech 88, Chick master 130/165).

### **Construction:**

The egg pattern device consists of:

- 1 Bar
- 2 Blocking shafts
- 3 Air controlled cylinder

The egg pattern device is placed above the infeed gates.

### **Process:**

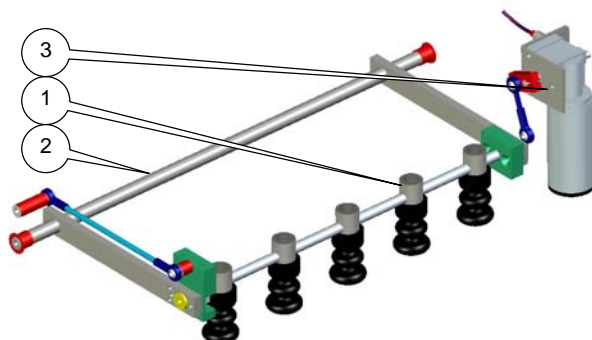
Trays with an offset cell pattern cannot be filled symmetrically and therefore, now and then, a pattern needs to be created to fill the complete tray automatically.

Normally the bar is up. As soon as the egg pattern needs to be created, the bar with blocking shafts moves down after eggs have been detected in all infeed gates. The roller track moves 1 step forward receiving a full row of eggs. Now only the sensors (4) above the gates without blocking shafts are looking for eggs. As soon as those sensors are detecting eggs, the roller track moves 1 step forwards, receiving an incomplete row of eggs. Eggs blocked by the blocking shafts remain in the gates. Afterwards the bar with blocking shafts moves up.

### **Safety:**

The egg pattern device is secured with a protective cover.

## OPTIONAL STAMPING UNIT



### Use:

The stamping unit is designed for coding eggs.

### Construction:

The stamping unit consists of:

- 1 Shaft with stamps
- 2 Hinging frame
- 3 Drive mechanism

The stamping unit is placed above the cup conveyor close to the transfer position of eggs from roller track to cup conveyor.

### Process:

After a step forward of the roller track and the cup conveyor, the shaft with stamps moves down to code the row of eggs in the cup conveyor.

### Safety:

The stamping unit is covered but since this is not a safety cover with an open cover it is possible to sustain injury.

The cover above the stamping unit doesn't have a safety switch. With an open cover, the system remains running.



#### CAUTION!

The cover above the flap shaft is NOT a safety cover. Opening this cover does NOT stop the system.



#### ATTENTION!

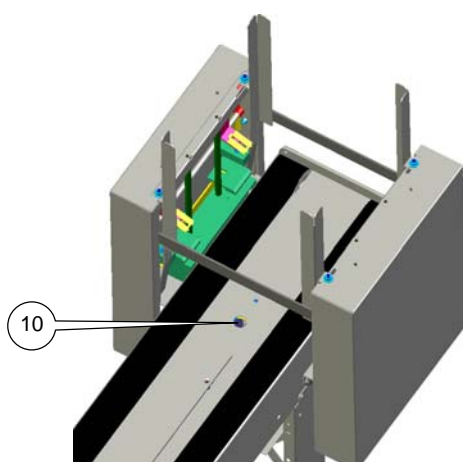
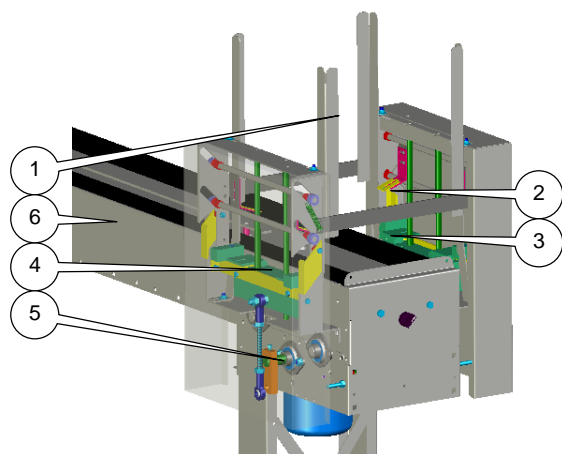
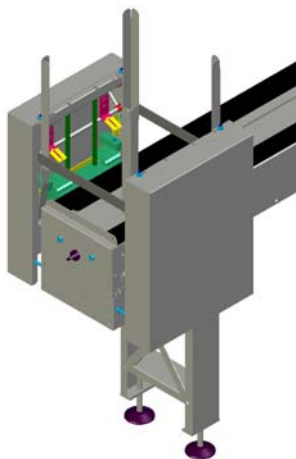
Do not enter objects or body parts into the stamping unit when it is running production.



#### TIP!

Do not store the stamps and ink into a room with a temperature below 12°C. Below this temperature, the ink becomes syrupy resulting in bad coding on the eggs.

## 30 CELL TRAY DENESTER



### Use:

The 30-cell tray denester separates a single 30 cell plastic or cardboard tray from a stack of trays and drops this tray on the output conveyor.

### Construction:

The 30-cell tray denester consists of:

- 1 Bunker
- 2 Top grippers
- 3 Lower grippers
- 4 Denester blocks
- 5 Drive mechanism

The 30-cell tray denester is placed on top of the output conveyor (6).

### Process:

Plastic or cardboard trays are manually supplied into the bunker and rest on the top grippers.

When the start denester sensor (10, positioned in the output conveyor underneath the tray denester) is OFF, the lower grippers remove 1 tray from the bottom of the stack of trays and drop this tray onto the output conveyor.

### Safety:

The denester is not completely secured with protective covers. Therefore be cautious with loosely hanging clothes and long hair, do not come too close to the denester and do not touch it when it is running production.

The lower grippers make unexpected fast and powerful movements. Never touch or come near this part when the packer is running production.



#### CAUTION!

Do not enter objects or body parts into the denester when it is running production. Keep distant to the lower grippers! These make unexpected fast and powerful movements!

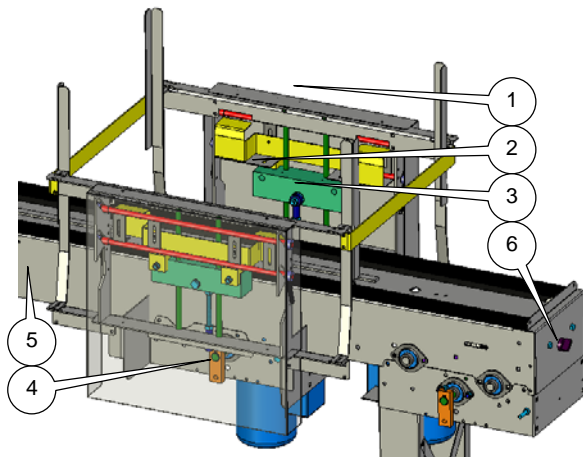
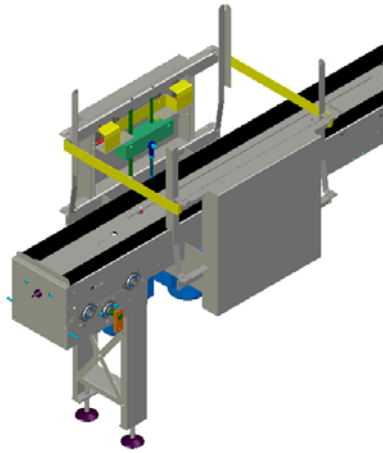


#### ATTENTION!

Do not enter objects or body parts into the denester when it is running production.



## HATCH TRAY DENESTER



### Use:

The hatch tray denester separates a hatch tray from a stack of trays and places this tray on the output conveyor.

### Construction:

The hatch tray denester consists of:

- 1 Bunker
- 2 Top grippers
- 3 Denester blocks
- 4 Drive mechanism

The hatch tray denester is placed on top of the output conveyor (5).

### Process:

Hatch trays are manually supplied into the bunker and rest on the top grippers. The first tray needs to be supplied by activating the INCH button (6). The next tray is automatically supplied after 5 cycles of the vacuum head (125 of 150 eggs are placed in the tray). The denester blocks remove 1 tray from the bottom of the stack of trays and places this tray onto the output conveyor. The last tray of the stack always remains into the denester.

### Safety:

The denester is not completely secured with protective covers. Therefore be cautious with loosely hanging clothes and long hair, do not come too close to the denester and do not touch it when it is running production. The denester blocks make unexpected fast and powerful movements. Never touch or come near this part when the packer is running production.



#### CAUTION!

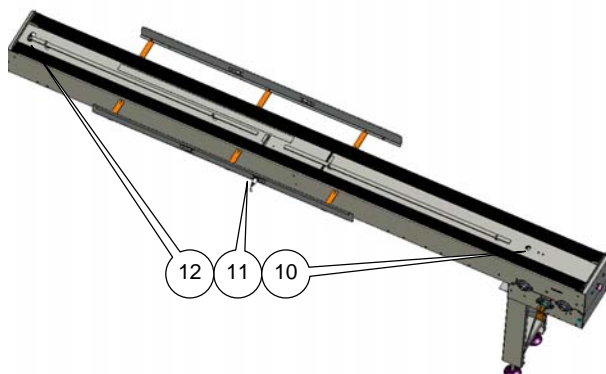
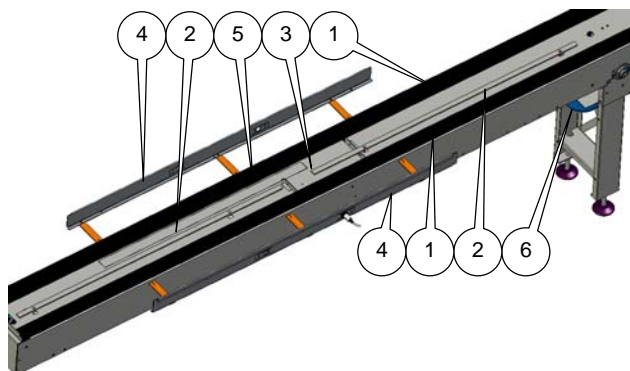
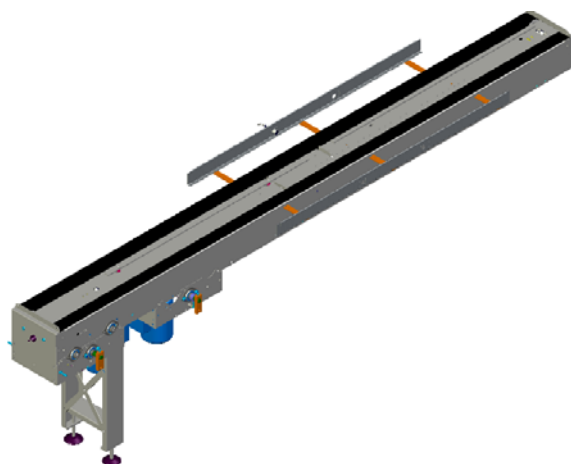
Do not enter objects or body parts into the denester when it is running production. Keep distant to the denester blocks! These make unexpected fast and powerful movements!



#### ATTENTION!

Do not enter objects or body parts into the denester when it is running production.

## OUTPUT CONVEYOR



### Use:

The output conveyor transports empty trays from the denesters towards the tray set position underneath the vacuum head, and full trays towards the position where they are manually or automatically removed.

### Construction:

The output conveyor consists of:

- 1 Conveyor
- 2 30-cell tray guide
- 3 30-cell stopper
- 4 Hatch tray guides
- 5 Hatch tray stoppers
- 6 Drive mechanism

For fast changeover over of tray types by means of repositioning of the output conveyor, a mobile version of the output conveyor is available.

This conveyor has 2 food with rollers instead of the 1-fixed feet.

### Process 30-cell tray:

When the start denester sensor (10) is OFF, the denester drops a tray on the conveyor. This tray is transported towards the 30-cell stopper. As soon as the tray is detected by the tray present sensor (11) the packer's vacuum head places the eggs into the tray. Now the stopper releases the full tray while at the same time stopping the next empty tray. The full tray is transported towards the end of the conveyor where it needs manual removal or automatic removal by the easy stacker.

When the tray present sensor (11) turns OFF, the stopper releases the waiting empty tray and stops it again at the tray set position.

### Process hatch tray:

A tray is automatically supplied after 5 cycles of the vacuum head (125 of 150 eggs are placed in the previous tray).

This tray is transported towards 1<sup>st</sup> hatch tray stopper. As soon as the tray is detected by the tray present sensor (11) the packer's combination vacuum head places the first 25 eggs into one side of the tray. Moves back to the packer to pick up another 25 eggs and places these eggs into the other side of the tray. Then the 2<sup>nd</sup> hatch tray stopper moves up, the 1<sup>st</sup> hatch tray stopper moves down and the hatch tray is transported towards the 2<sup>nd</sup> stopper. Again the combination vacuum head places 25 eggs in both sides of the tray. This sequence is repeated for the last 50 eggs. When the hatch tray is full, it is transported towards the end of the conveyor, where it needs manual removal (detected by a sensor (12)).



**Process other types of hatch trays:**

Since there are a variety of tray types, there are also a variety of denesters, output conveyors and vacuum heads to pack eggs into this wide variety of tray types.

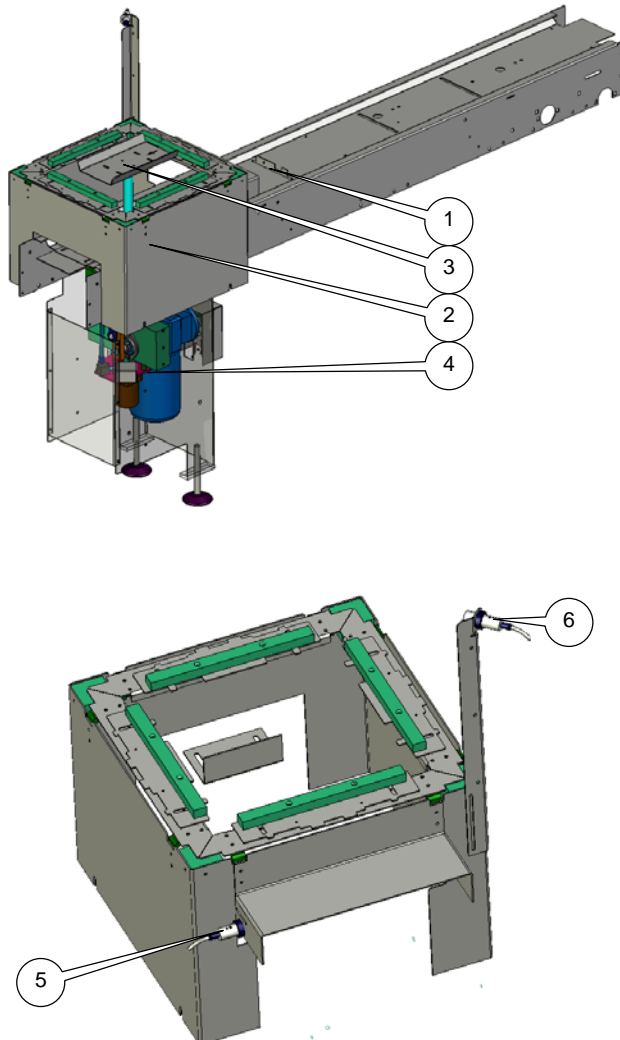
Although the amount of stoppers and type of vacuum head may differ, the process how to fill all those trays is in general the same as described above.

**Safety:**

The output conveyor is not completely secured with protective covers. Therefore be cautious with loosely hanging clothes and long hair, do not come too close to the output conveyor and do not touch it when it is running production. Pay special attention to the belts. Never touch the belts when the conveyor it is running production.

	<p><b>CAUTION!</b></p> <p>Do not enter objects or body parts into the output conveyor when it is running production.</p>
	<p><b>ATTENTION!</b></p> <p>Do not enter objects or body parts into the output conveyor when it is running production.</p>

## OPTIONAL EASY STACKER



### Use:

The easy stacker is designed to automatically stack full 30 cell trays.

### Construction:

The easy stacker consists of:

- 1 Infeed stopper
- 2 Tray stacker
- 3 Lift
- 4 Drive mechanism

The easy stacker is positioned at the far end of the output conveyor and is partly situated above and partly below it. Fixed feed carry the weight of the easy stacker.

### Process:

The infeed stopper just in front of the tray stacker stops full trays. As soon as the tray is detected by the infeed sensor (5) the stopper releases the tray while at the same time stopping the next tray. The tray is transported towards the lift.

When the infeed sensor (5) does no longer detect the tray, the lift moves the tray up through the tilting plates, lifting up the trays that are already present on the tilting plates.

When the lift is down again, the next tray is supplied above the lift. Now the lift moves up a few cm, stops, turns 90° and moves up again until the tray is also placed on the tilting plates. During the downwards movement, the lift stops again to turn back 90°.

This sequence is continued until the top sensor (6) detects the top of the stack of trays.

Normally this sensor turns ON when 7 trays are on the tilting plate. The 6 top trays are easy removable by hand. The lowest 7<sup>th</sup> tray must remain on the tilting plates.

### Safety:

Be careful with the optional easy stacker. This unit makes unexpected fast and powerful movements! Always leave the last tray on the easy stacker to prevent the possibility of easy entering of this unit with objects or body parts.



#### CAUTION!

Do not enter objects or body parts into the easy stacker when it is running production. Always leave a tray on the tilting plates. Keep distant to the easy stacker! It makes unexpected fast and powerful movements!



#### ATTENTION!

Do not enter objects or body parts into the easy stacker when it is running production.



### 3. OPERATION

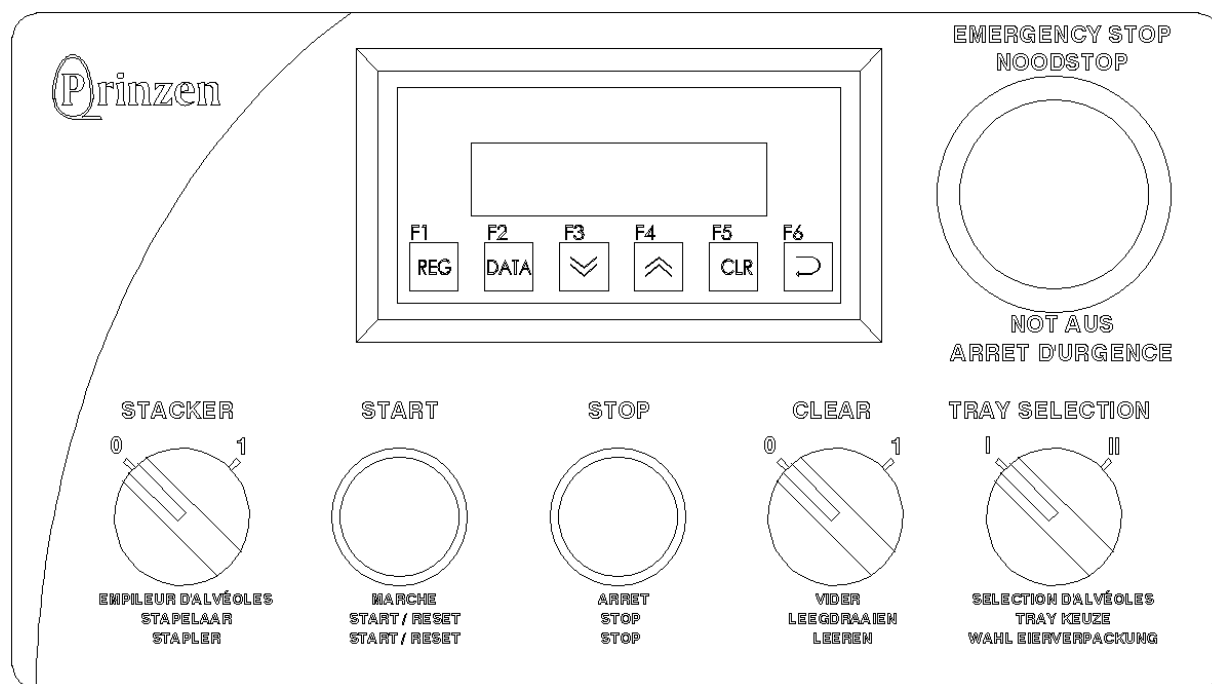
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## **SAFETY REGULATIONS**

Before starting operation, cleaning, maintaining the system or before remedying breakdowns first read the chapters **Introduction** and **Safety**.

## EXPLANATION OF THE OPERATION

### OPERATING PANEL



#### Man Machine Interface:

The display of the Man Machine Interface (MMI) gives information about the status of the system. When the system is running production, an egg counter appears on the display. When the system is stopped, the display shows the reason for stopping. See [status messages](#) further on in this chapter for possible messages.

The buttons on the MMI are for advanced users of the system like maintenance engineers or service engineers. With these buttons parameter settings for controlling the system can be adjusted. See [Man Machine Interface](#) further on in this chapter for explanation how to use the buttons to change parameter settings.

#### Emergency button:

After pushing the red button, the complete system stops. Only use this button in case of emergencies.

#### Start:

This button is a start-, but also a reset- and an initializing button.

After a breakdown, first the breakdown needs to be solved. By pressing the start button, the controller verifies if all breakdowns are solved. When this is the case, the light inside the start button turns ON. Now it is possible to start the system by pressing the start button again.

After switching the system ON, some units in the system (Transfer arm, roller track and cup conveyor, optional easy stackers) need to move to their initial positions. By pressing the start button, these units move to their initial positions. When the units are initialized, the light inside the start button turns ON. Now it is possible to start the system by pressing the start button again.



#### DANGER!

Although a lot of safety measures are built into the control of the system, Prinzen cannot guarantee that no dangerous situations will occur. Before you start the system, make sure no persons are in danger.

**Stop:**

By touching the stop button, you will stop the system. The system stops after finishing certain internal controlling cycles. Thus it may take some time before the system is completely stopped. This is the normal procedure to stop the system.

**Clear:**

This button is used to remove all eggs out of the system.

Normally all gates need to be filled with eggs before these eggs are transported towards the tray. When no more eggs are entering the system on the infeed conveyor, the system waits for eggs and the eggs on the roller track and cup conveyor remain on the system.

When the clear button is switched to 1, the eggs in the system are transported towards the vacuum head even though no eggs are detected at the gates. The vacuum head remains filling trays until all eggs are removed from the packer.

**TIP!**

The last trays leaving the system may be only partially filled!

## OPTIONAL BUTTONS

**Stacker:**

This button is only present on systems that are extended with the optional automatic tray stacker.

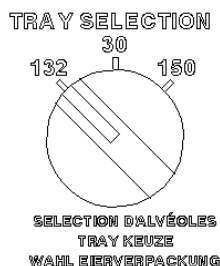
When the stacker is switched to 0, the automatic tray stacker is not used. Trays are not stacked and transported straight towards the output belts.

When the stacker is switched to 1, the automatic tray stacker is used to stack 6 trays and transport these stacks towards the output belts.

**Tray selection:**

This button is only present on systems that are able to use 2 different tray types.

Most common is the PSP5 with 30 cell trays and 150 cell hatch trays. In that case switch the tray selection switch to I for using the 30 cell trays and to II for using the 150 cell hatch trays.



Since the PSPC7 may run 3 different types of trays, this system may have a 3 positions tray selection switch. A sticker shows how to set the selection switch to run the appropriate tray.

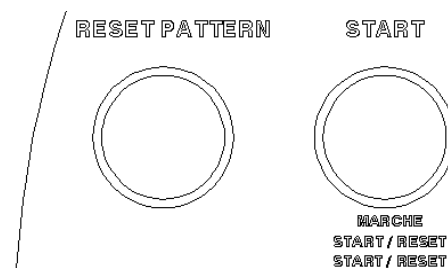
**Reset pattern:**

This button is only present on systems with the optional egg pattern device.

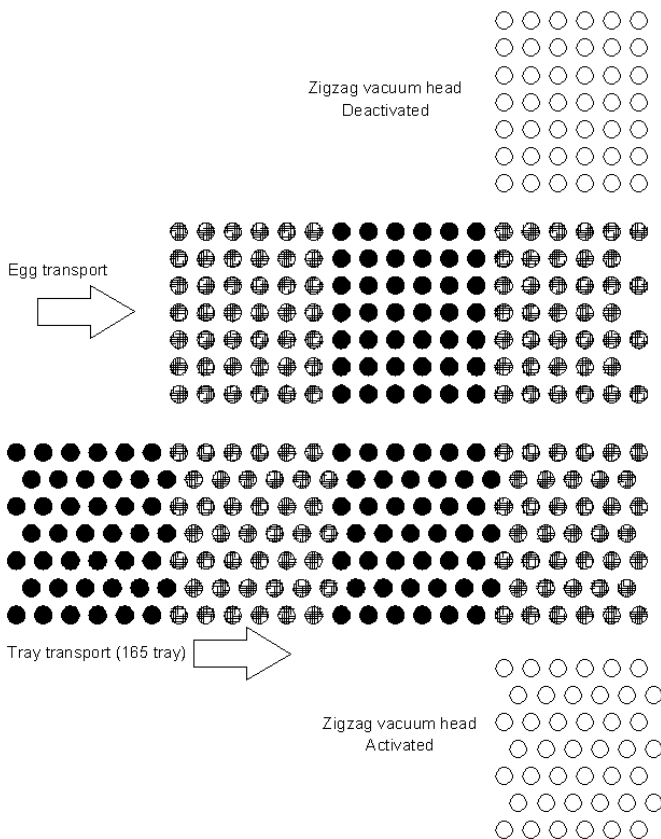
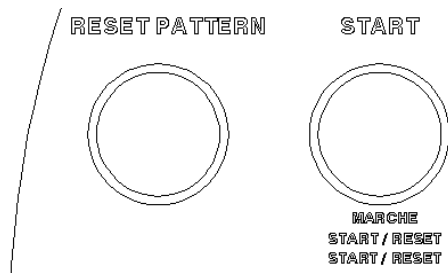
For these systems it is important not to disturb the sequence of filling trays. When a half filled tray is removed manually, and a next empty tray is entered, the filling of this tray is out of sequence resulting in trays, which are not completely filled, and eggs placed beside the tray onto the conveyor.

A new pattern can only be started by pushing the reset pattern button or switching to a different tray type with the tray selection switch.

In all other situations, the sequence of filling trays remains active (even after switching off the system or pushing an emergency button).







#### Normal operation to start a new pattern:

- Start on an empty, not running system. No eggs on roller track, cup conveyor or vacuum head and a new empty tray on the output conveyor.
- The light inside the reset pattern button starts blinking to draw the operator's attention to push this button to start the system with a new pattern.
- Push the reset pattern button.
- Push the start button.

#### Stopping operation with egg pattern device:

- When the last eggs are entering the infeed conveyor, switch the clear button to 1.
- When all eggs are removed from the system and are placed in the tray, switch the clear button back to 0.
- The light inside the reset pattern button starts blinking to draw the operator's attention to push this button to start the system with a new pattern.

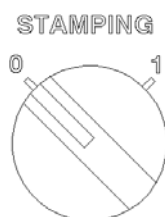
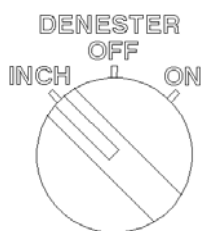
#### Filling trays gets out of sequence when:

- The reset pattern button is pushed when there are still eggs inside the packer.
- The emergency button is pressed while the roller track and cup conveyor are making a step forward.
- The system is switched off (or power failure) while the roller track and cup conveyor are making a step forward.

When filling trays is out of sequence follow below procedure:

- Stop the system and remove all eggs out of the packer (roller track, cup conveyor, vacuum head).
- Remove the tray on the output conveyor.
- Push the reset pattern button.
- Push the start button.

## LOCAL BUTTONS



For easy control of the system, some buttons are positioned very close to the unit that they control. These buttons are: Denester selection switch and stamping unit selection switch.

### **Denester selection switch:**

When the denester is switched OFF, no denester is used. No trays are supplied on the output conveyor towards the tray set position. When the denester is switched ON, the denester is working automatically. Depending on the selected tray type (tray selection switch) on request of the output conveyor, the denester supplies the appropriate tray towards the tray set position.

For adjustment and test purposes it is possible to manually control the denester by turning the denester selection switch to INCH.

When the system is started, selecting INCH results in the supply of a tray onto the output conveyor.

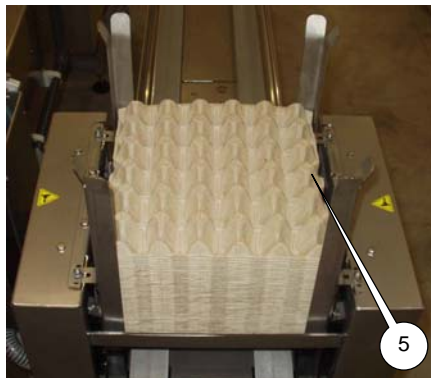
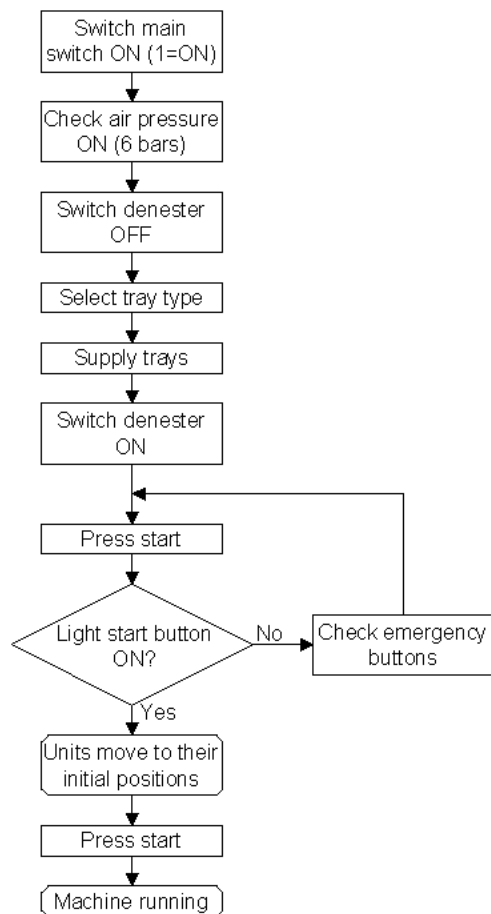
When the system is stopped and the selection switch is set to INCH the denester starts to move. When the switch is released it turns back to the OFF position and the denester stops.

### **Stamping unit selection switch:**

This button is only present on systems that are equipped with the stamping unit.

When stamping is switched to 0, the stamping unit is not used. Eggs leave the system without a code.

When stamping is switched to 1, the stamping unit is used and eggs leave the system coded.



## STARTING PRODUCTION

Follow below steps to start up the system:



### CAUTION!

Make sure all protective covers are in place.  
Make sure no persons are in danger.



### ATTENTION!

Make sure no tools or other objects are present inside the system.



### ATTENTION!

Before starting the system make sure maintenance is performed according to the maintenance instructions further on in this manual.

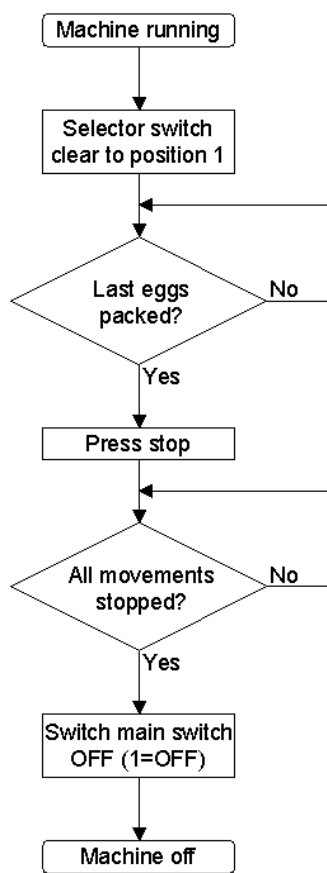
1. Switch the system ON.
2. When the system uses compressed air, check the main air pressure. Set the air pressure to 6 bars.
3. Set the denester selection switch to OFF.
4. Set the tray selection switch to the appropriate tray type.
5. Fill the appropriate denester bunker with the selected tray type. For the 30-cell tray, place the trays with the tray grip pointing towards the side of the output conveyor.



### TIP!

When the trays in the stack are packed tightly into each other, knock the stack loose before filling the bunkers denester.

6. Set the denester selection switch to ON.
7. Push the start button to reset and initializing the system.
8. Push the start button to start the system.
9. Now the system is running.



## STOPPING PRODUCTION

Follow below steps to stop the system:

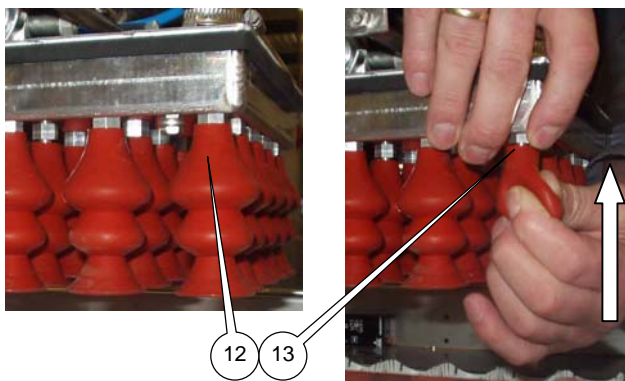
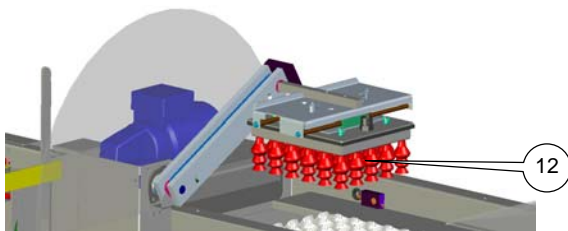
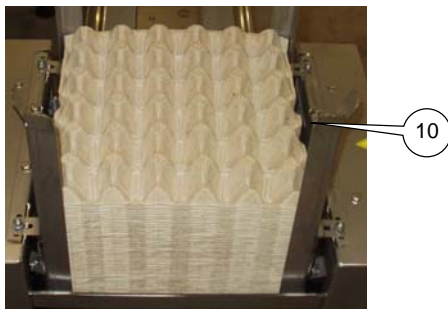
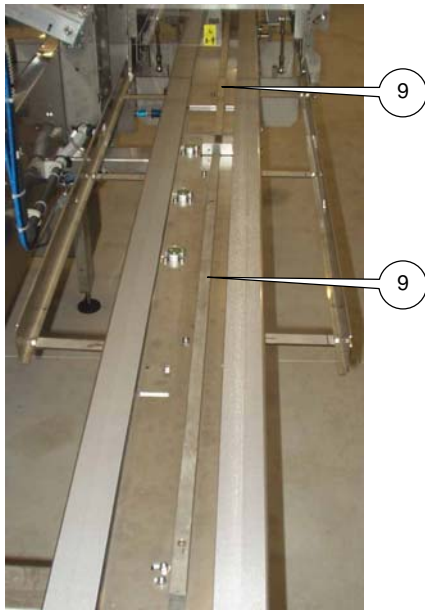
1. First wait until no more eggs are supplied on the egg-collecting conveyor.
2. Set the clear selection switch to 1.
3. Wait until all eggs are placed into the trays. No more eggs should be present inside the system.



### TIP!

The last trays leaving the system may be only partially filled.

4. Push the stop button.
5. Wait until all movements of the system are stopped.
6. Switch the system OFF.
7. Remove all trays from the system.



## PRODUCT CHANGE OVER

### CHANGE OVER TO 30 TRAY

Follow below steps to prepare the system for running the 30-tray:

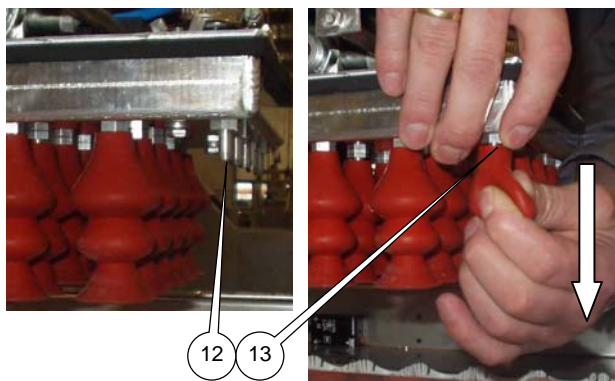
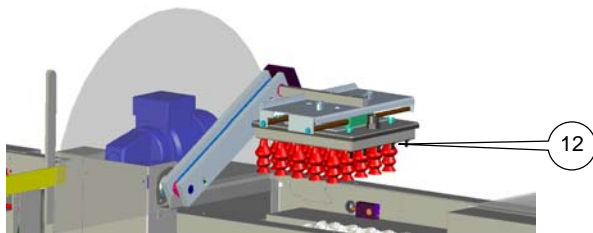
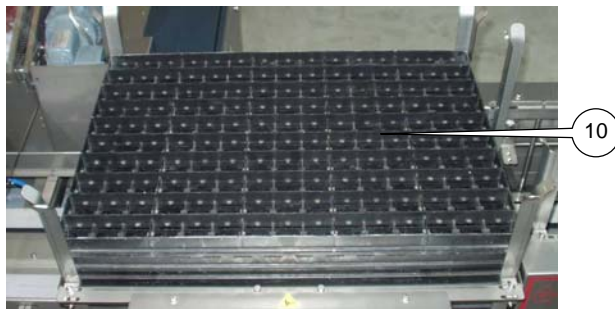
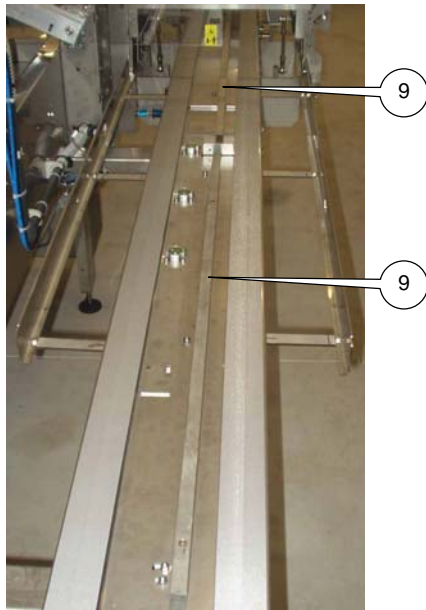
1. First wait until no more eggs are supplied on the egg-collecting conveyor.
2. Set the clear selection switch to 1.
3. Wait until all eggs are placed into the trays. No more eggs should be present inside the system.
4. Set the clear selection switch back to 0.
5. Push the stop button.
6. Wait until all movements of the system are stopped.
7. Set the denester selection switch to OFF.
8. Set the tray selection switch to the 30-cell tray.
9. Pull the 30 cell tray guides up and slide them towards the end of the conveyor for guiding the 30 cell trays.
10. Fill the 30-cell denester bunker with the 30-cell trays. Place the trays with the tray grip pointing towards the side of the output conveyor.



#### **TIP!**

When the trays in the stack are packed tightly into each other, knock the stack loose before filling the bunkers denester.

11. Set the denester selection switch to ON.
12. Place the 5 suction cups onto the vacuum head to have 5x6 suction cups.
13. Support the vacuum head while pushing the suction cups onto the nipples. Make sure the suction cups are completely onto the nipples and are pointing straight downward.
14. Push the start button to start the system.
15. Now the system is running with the 30-cell trays.



## **CHANGE OVER TO 150 TRAY**

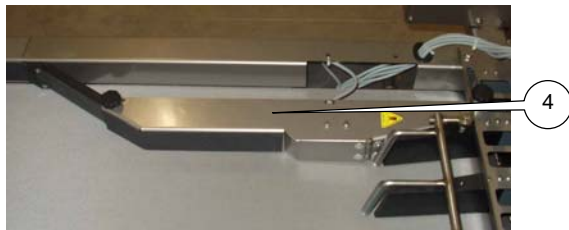
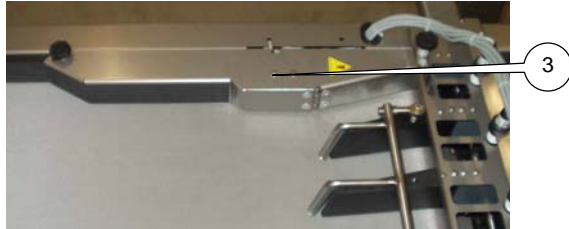
Follow below steps to prepare the system for running the 150-tray:

1. First wait until no more eggs are supplied on the egg-collecting conveyor.
2. Set the clear selection switch to 1.
3. Wait until all eggs are placed into the trays. No more eggs should be present inside the system.
4. Set the clear selection switch back to 0.
5. Push the stop button.
6. Wait until all movements of the system are stopped.
7. Set the denester selection switch to OFF.
8. Set the tray selection switch to the 150-cell tray.
9. Slide the 30-cell tray guides towards the denesters until they move down.
10. Fill the 150-cell denester bunker with the 150-cell trays.
11. Set the denester selection switch to ON.
12. Remove the 5 suction cups from the vacuum head to have 5x5 suction cups. Always remove the row of suction cups pointing towards the roller track / infeed conveyor.
13. Support the vacuum head while pulling the suction cups from the nipples.
14. Push the start button to start the system.
15. Supply the first tray by activating the INCH button. Then set the switch back to ON.
16. Now the system is running with the 150-cell trays.



## CONVERSION

### GATE OPEN/CLOSE



On a 7 rows system it is possible to run this system with 5, 6 or 7 rows of eggs by closing or opening gates on the sides of the packer. When running 30-cells trays on this system both outside gates are closed. See alongside pictures for opening (3) and closing (4) of the gates.

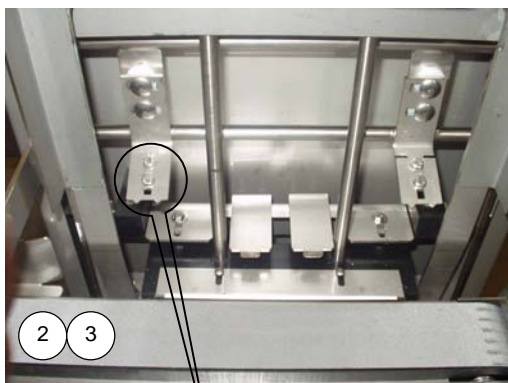


### MOBILE OUTPUT CONVEYOR REPOSITIONING

On a 7 rows system it may be necessary to reposition the output conveyor towards (or away from) the packer during a product change over. In that case the output conveyor is mobile.

Follow the below steps to reposition the output conveyor:

5. Loosen the knobs that tighten the output conveyor to the packer.
6. Reposition the output conveyor. Position the holes of the support strips above the correct threaded holes in the beams.
7. Tighten the support strips to the beams with the knobs.



For several types of trays, Prinzen has tray denester conversion kits. Among others the following kits are available:

1. Paper trays
2. Plastic trays
3. Twin pack (Jordano) trays
4. Hartmann egg tech unic trays

### **DENESTER TO PAPER TRAY**

The paper trays denester has on both sides of the denester:

- 2 top grippers with 2 pins.
- 2 plastic lower grippers with 6 pins.

For conversion, place the lower grippers onto the denester block.

### **DENESTER TO PLASTIC TRAY**

The plastic trays denester has on both sides of the denester:

- 2 top grippers with 2 pins.
- 1 lower gripper with 2 inside grippers attached to it.

For conversion, place the lower gripper (with the 2 inside grippers attached to it) onto the denester block.

### **DENESTER TO TWIN PACK TRAY**

The only difference between the plastic tray parts and the twin pack tray parts are the top grippers. The top grippers for the twin pack tray have 1 pin instead of 2. In case that your gripper has 2 pins, you can remove the outside pin on both grippers.

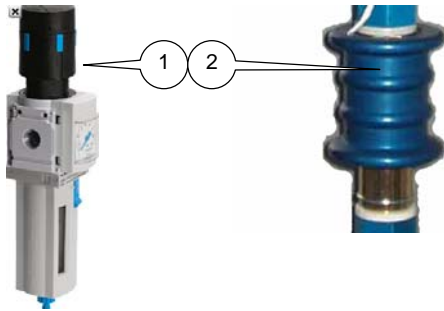
### **DENESTER TO HARTMANN EGG TECH UNIC TRAY**

The hartmann egg tech unic trays denester has on both sides of the denester:

- 2 top grippers with 1 pin.
- 1 lower gripper mounted on top of 2 spacers.

For conversion, place the lower gripper (with the 2 spacers in between) onto the denester blocks.





## OPERATION ADJUSTMENTS

### AIR SUPPLY

Normally the Prinzen systems need an air pressure of approximately 6 bars (make sure your compressed air supply is between 8 and 10 bars).

Adjust this air pressure with the primary pressure regulator. Pull the knob (1) up and turn it to change the air pressure. Press the knob down to lock it again.

On the air pressure regulator a manual ON/OFF switch (2) is positioned. Move the switch towards the regulator to switch the air ON. Move away from the regulator to switch the air OFF.



### GATE BLOCKERS

Gate blockers prevent the possibility of 2 smaller eggs entering 1 gate.

When smaller eggs are produced keep all gate blockers in the infeed gates (8).

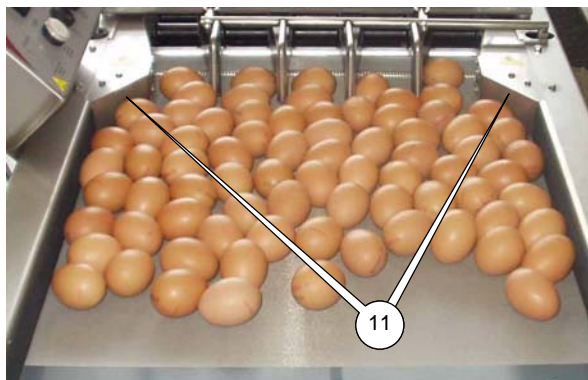
When the produced eggs are becoming bigger remove every other gate blocker (9).

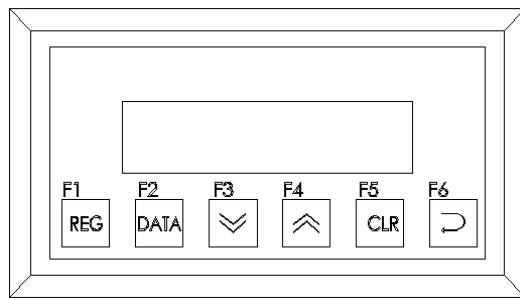
As soon as most of the produced eggs are big and the infeed of eggs get stuck by the gate blockers, remove all gate blocker (10).

### START / STOP DELAY TIME

Check the start and stop timers for the egg-collecting conveyor. When the infeed belt of the packer is full with eggs from the egg-collecting conveyor the egg pressure switches (11) at the side of the infeed belt are activated. When these switches remain activated for a certain time (stop delay time), a signal is sent to the egg-collecting conveyor to stop supplying eggs. When the switches are no longer activated, a certain time later (start delay time) a signal is sent to the egg-collecting conveyor to supply eggs again. Adjust the delay times to get a smooth flow of eggs without too much starting and stopping of the egg-collecting conveyor.


For adjustment of the timers see **Egg belt control menu** further on in this chapter.





Press F6, the most right digit flashes.	F6	1.5 sec
Press F3, all digits move to the left.	F3	15.0 sec
The most right digit becomes 0	F3	50.0 sec
Repeat until all digits are 0.	F3	00.0 sec
Press F4 to increase most right digit.	F4	00.1 sec
Press F3 to move all digits to the left.	F3	01.0 sec
Press F4 to increase most right digit.	F4	01.1 sec
Repeat until desired value appears.	F4	01.2 sec
Repeat until desired number appears	F3	12.0 sec
Repeat until desired number appears	F4	12.1 sec
Press F6 to acknowledge number.	F6	12.1 sec





## MAN MACHINE INTERFACE

The Man Machine Interface (MMI) is mounted in the operator panel.

### BUTTONS MMI

The buttons on the MMI are for advanced users of the system like maintenance engineers or service engineers. By using the 6 buttons below the display it is possible to enter sub menus, change timers, etcetera:

- F1: Go to next screen.
- F2: Go to previous screen.
- F3: Change numerical values.  
Change pick up position transfer arm.  
Change tray set position transfer arm.
- F4: Change numerical values.  
Toggle functions ON/OFF.
- F5: Reset.
- F6: Acknowledge value (enter).  
Select submenu (enter).

### CHANGING NUMERICAL VALUES

See alongside picture how to change a parameter value with the MMI buttons.

### DISPLAY MMI

As soon as the main switch turned ON, the MMI performs a short self-test. During this test, searching appears on the display.

Shortly after the system is switched ON, the following information appears on the display.

When the system is started the display show an egg counter. This counter is reset each time the system is turned OFF, or after pressing the F5 button.

Start sequence  
stacker

Optional automatic tray stacker (type PS2) is initializing after switching ON the system.

## **STATUS MESSAGES**

When the system is stopped, the display shows the reason for stopping. The following messages may appear on the display:

Waiting for eggs  
0000345 eggs

- The system is waiting for eggs.
- Supply eggs to the system

Machine stopped  
by stop button

- The system is stopped by the stop button.
- Push start to run the system.

Press start to  
begin

- The system has been initialized.
- Push start to run the system.

Emergency Stop !  
Unlock button and p

- Emergency button is pressed.
- Release emergency button.

Eggs not lifted by  
suction box

- Eggs remained on the cup conveyor.
- Remove eggs manually.

Stopped at  
transfer

- Eggs remained between roller track and cup conveyor.
- Remove eggs manually.

Denester fault no  
tray out

- Denester did not drop a tray on the output conveyor.
- Clear the fault or place a new stack of trays in the denester.

Conveyor full

- The output conveyor is full with trays.
- Remove the trays from the output conveyor.

No Tray

- No tray is present at stopper position.
- Clear the fault

Denester off

- Denester is switched OFF.
- Set the denester selection switch to ON.

Transfer fault

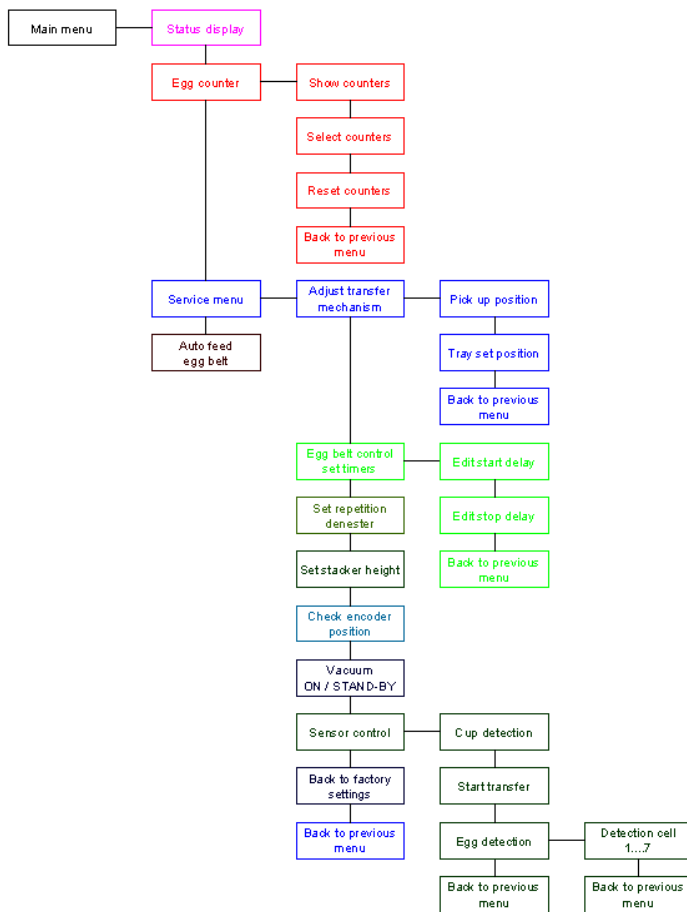
- The movement of the transfer lever did not finish in a certain time.
- This indicates a motor or inverter fault. Contact your dealer for assistance.

Stacker fault press  
start for retry

- Optional automatic tray stacker (type PS2) did not initialize correct.
- Press start to retry initializing. If message remains on the screen this indicates a motor or inverter fault. Contact your dealer for assistance.

Check cup detection  
flaps then press st

- Flaps are out of position or eggs, dirt or parts are in between roller track and cup conveyor.
- Clear fault.



## MMI MENU'S

From the main menu, 4-sub menus are available:

- Status display menu.
- Egg counter menu.
- Service menu.
- Autofeed egg belt menu.

Use F1 and F2 to go to a different screen on the same menu level.

Use F6 to enter a certain (sub)menu.

Use F4 to toggle a certain functionality ON or OFF.

## STATUS DISPLAY MENU

During normal running of the system, the status display menu is visible on the display.

This status display menu shows the status of the system and when it is stopped, it shows the reason for stopping.

For possible messages see the above-mentioned **Status display messages**.

## AUTOFEED EGG BELT MENU

The autofeed egg belt menu gives the possibility to supply eggs from a long distance from the packer without operators present. Press F4 to switch autofeed ON. Starting the system only starts the egg collecting belts and the packer's infeed conveyor. As soon as eggs are detected by the packer (infeed gates, egg pressure switches), the egg collecting belts and the infeed conveyor stop running. Press F4 to switch autofeed OFF. Now, starting the system starts the complete system and eggs are packed into the trays.



### TIP!

The autofeed egg belt functionality is not available on single phase systems.

## EGG COUNTER MENU

From the egg counter menu, 3 sub menu's are available: Show counters menu, select counters menu and reset counter menu.

### Show counters menu:

Eight egg counters are included. C1 to C6 are batch counters. For example: Use a batch counter for each henhouse. Total counter 1 shows the sum of counters C1 to C6. Total counter 2 shows the total amount of eggs packed by the system during its lifetime and cannot be reset.

The counter that states "active" is the counter currently in use to count the eggs.

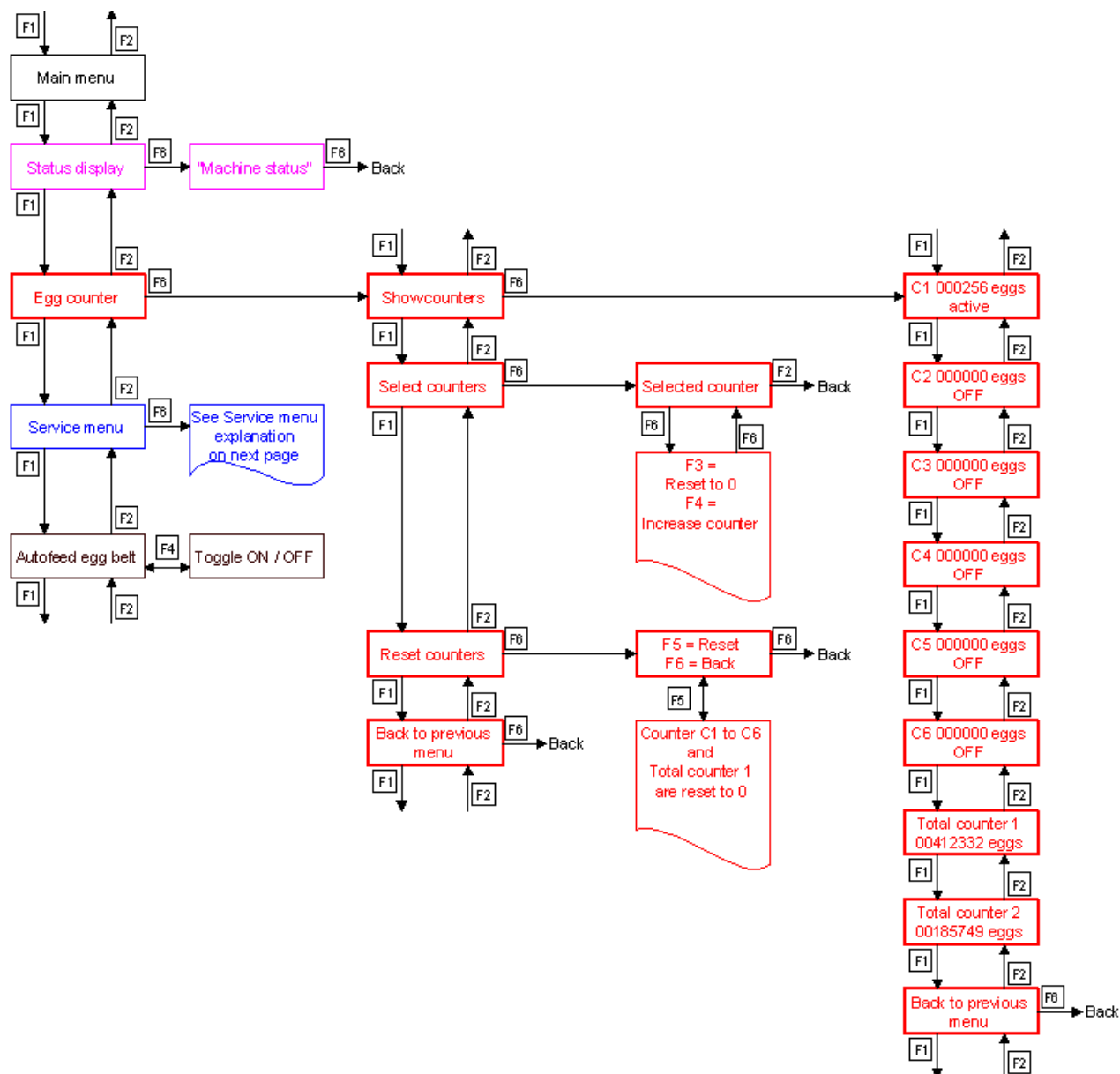
### Select counters menu:

To select a new "active" counter enter the select counters menu. Press F6 to change the current selected counter. Press F4 to increase the counter number. Press F6 to acknowledge.

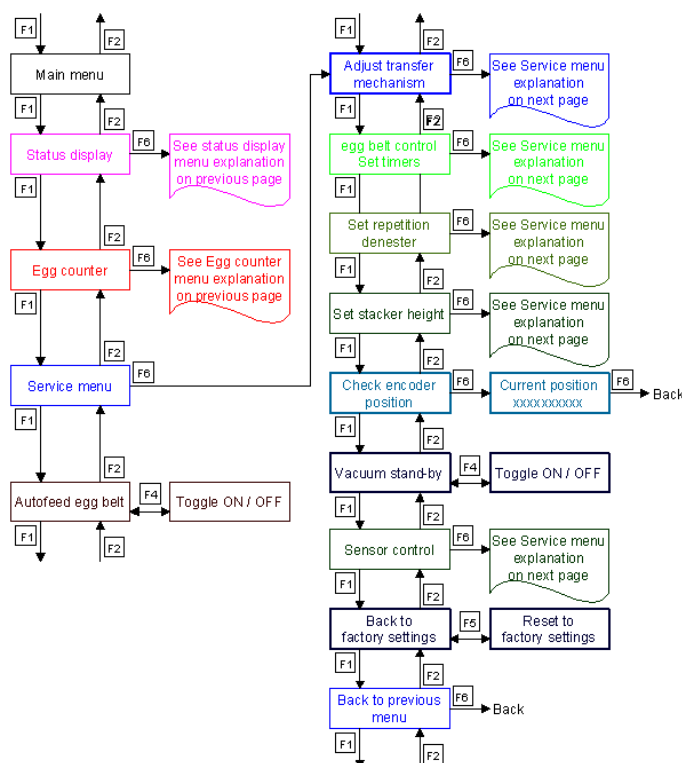
The selected counter is the counter used to count the eggs and is visible on the display while the system is running production.

### Reset counters:

Using this menu resets all counters (except for total counter 2). Press F5 to reset all the counters.



## SERVICE MENU SEVERAL FUNCTIONS



From the service menu, 8-sub menus are available:

- Adjust transfer mechanism.
- Egg belt control set timers.
- Set repetition denester.
- Set stacker height.
- Check encoder position.
- Vacuum stand-by.
- Sensor control.
- Back to factory settings.

### Check encoder position:

The encoder keeps track of the position of the transfer lever with vacuum head. Here the current encoder position is displayed. The encoder has a zero position, which is the vertical position of the transfer lever. If an "F" is shown before the number the encoder position is negative which means that the transfer lever is positioned towards the cup conveyor. Without an "F" before the number, the encoder position is positive which means that the transfer lever is positioned towards the output conveyor.

### Vacuum stand-by:

When Vacuum ON is selected, the vacuum pump is running as long as the main switch is ON.

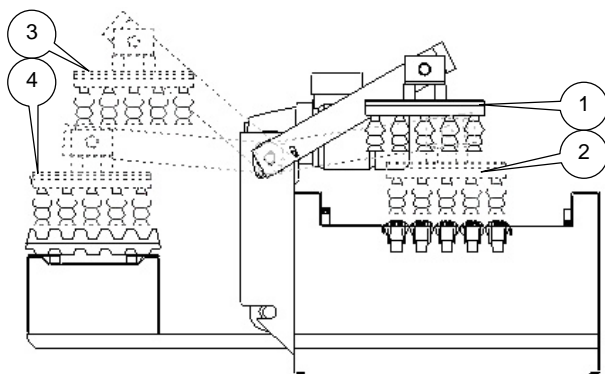
When Vacuum stand-by is selected, the vacuum pump starts running when the system is started and stops when the system is stopped unless the transfer arm is not in its rest position. Toggle F4 to select vacuum ON or vacuum stand-by.

### Back to factory settings:

Using this menu resets the following parameters back to the factory settings:

- Sensor control (all sensors selected).
- Stack height (6 trays).
- Denester repetition (3 times).
- Auto feed egg belt (OFF).
- Egg belt control start delay (1.5 seconds).
- Egg belt control stop delay (1.5 seconds).





## SERVICE MENU ADJUST TRANSFER MECHANISM

The transfer arm has 4 stop positions; rest position (1), pick-up position (2), conveyor full stop position (3) and tray set position (4). The pick-up position and the tray set position are adjustable.

### Adjust the pick-up position:

When the vacuum head is at the pick up position, the tip (5) of the suction cup should be at the same height as the end of the slots (6) in the cup (factory setting). Follow below procedure to adjust this position:

- Select "Pick-up position".
- Choose "Transfer to cups" when the suction cups are too high or "Transfer to conveyor" when suction cups are too low.
- Press F3 to move the transfer arm into the selected direction. Every time F3 is pressed the transfer arm moves a small step into this direction.
- Select "Set position by pressing F6".
- A screen appears showing that the changed position is accepted or not.




In case you do not want to change the pick-up position but only wanted to move the transfer arm, press "Back to previous menu" instead of "Set position by pressing F6".

### Adjust the tray set position:

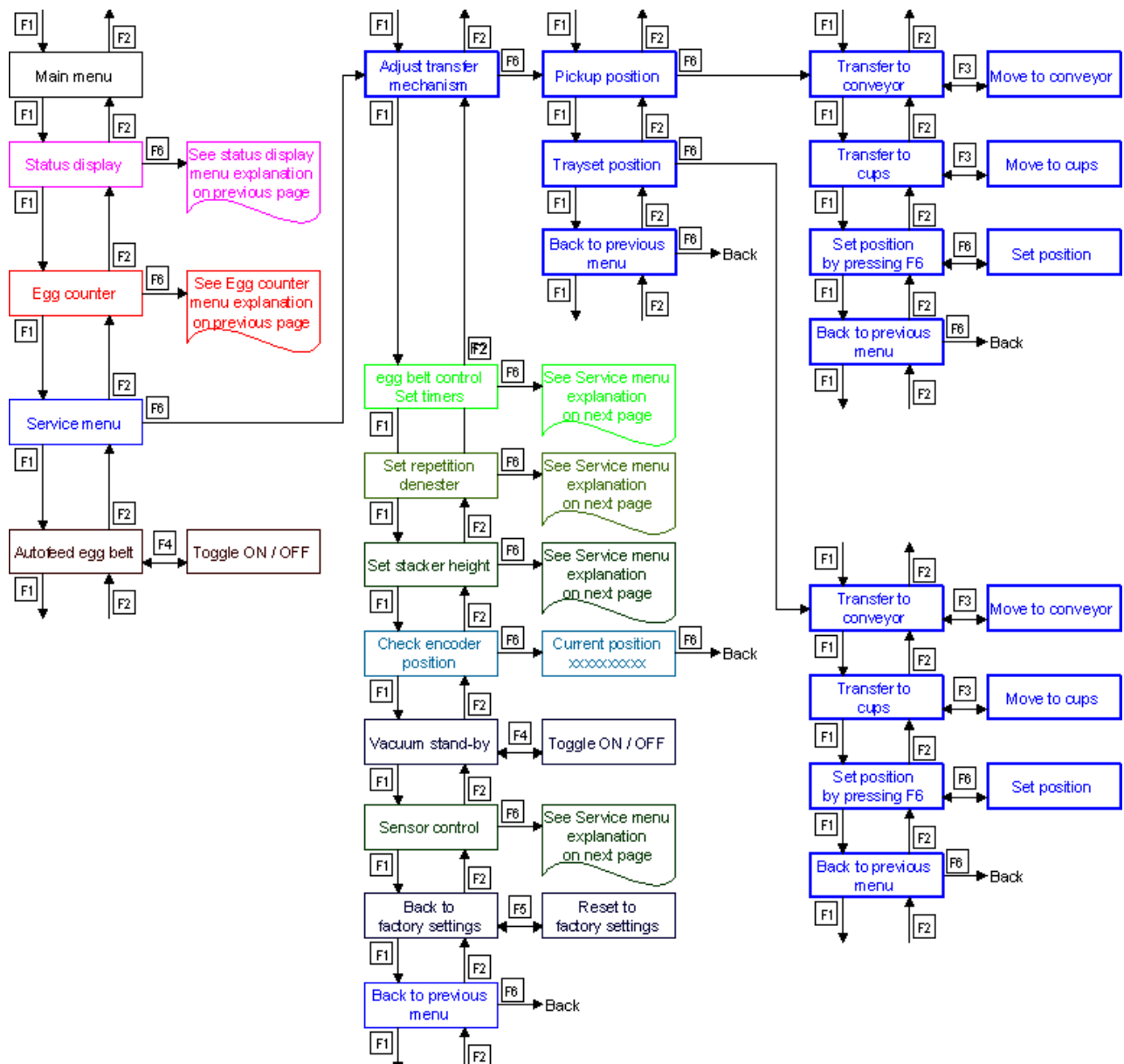
When the vacuum head is at the tray set position, the tip (7) of the suction cup should be 5 mm above the surface (8) of the hatch tray (factory setting). Follow below procedure to adjust this position:

- Select "Tray set position".
- Choose "Transfer to conveyor" when the suction cups are too high or "Transfer to cups" when suction cups are too low.
- Press F3 to move the transfer arm into the selected direction. Every time F3 is pressed the transfer arm moves a small step into this direction.
- Select "Set position by pressing F6".
- A screen appears showing that the changed position is accepted or not.

In case you do not want to change the tray set position but only wanted to move the transfer arm, press "Back to previous menu" instead of "Set position by pressing F6".

	<p><b>TIP!</b> The pick-up position and tray set position may differ a little bit from the adjusted position. The transfer arm may lower a bit further than the set position. Adjust the position a little bit higher than the required pick-up position and tray set position.</p>
	<p><b>TIP!</b> Since the encoder knows if the transfer arm is above the cups or the conveyor, adjusting the pick-up position when the transfer arm is above the conveyor results in a not accepted when set position is pressed.</p>
	<p><b>TIP!</b> Since the encoder knows if the transfer arm is above the cups or the conveyor, adjusting the tray set position when the transfer arm is above the cups results in a not accepted when set position is pressed.</p>





## **SERVICE MENU EGG BELT CONTROL**

In this menu the timers for controlling the automatic start and stop of the egg-collecting conveyor are adjustable. Follow below procedure to change the start delay or stop delay:

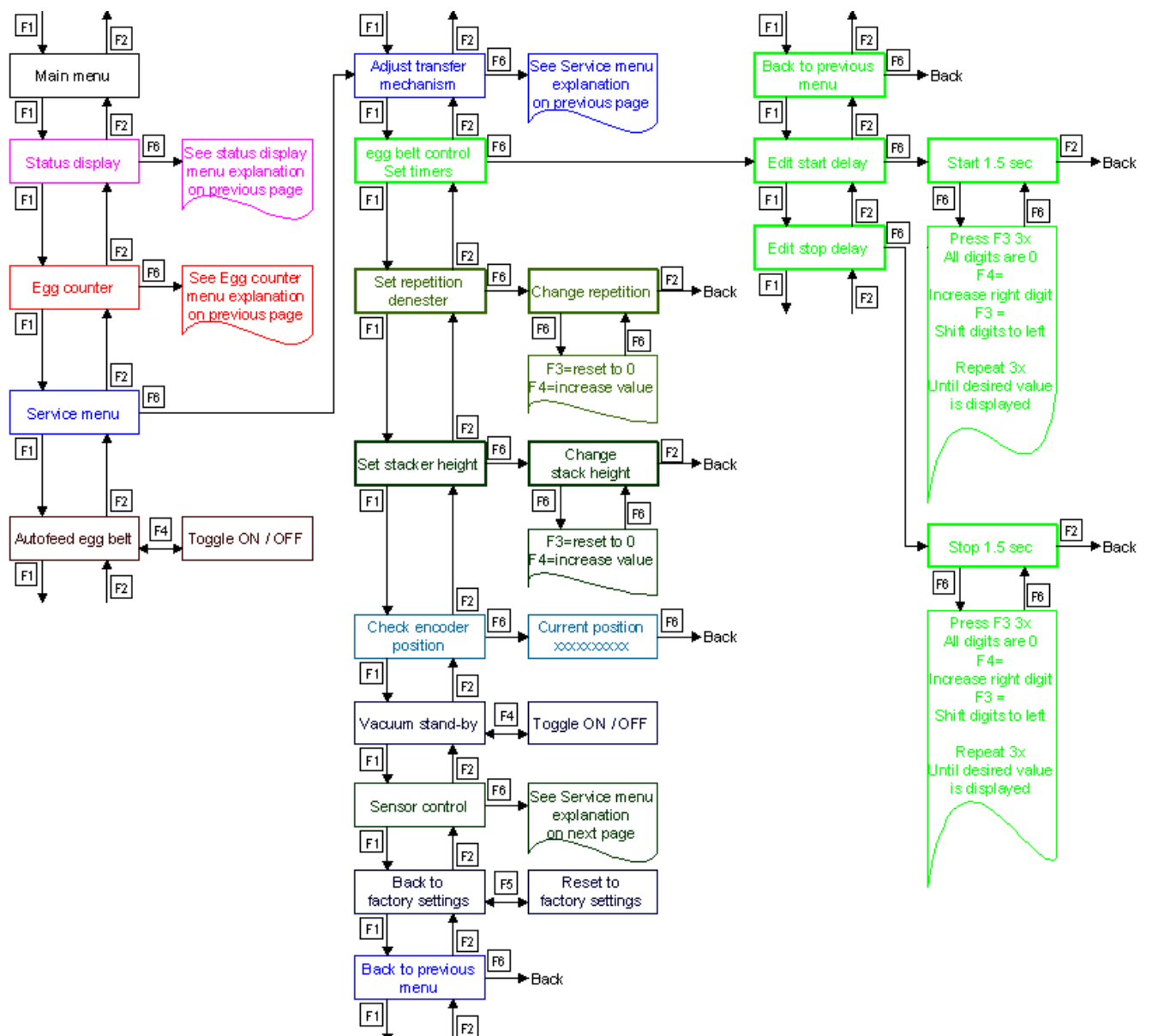
- Press F6 to be able to change the value of the parameter.
- Repeat pressing F3 until all digits are 0.
- Press F4 to increase the most right digit until the required digit value is reached.
- Press F3 to shift this digit to the left.
- Repeat the above until the required start delay or stop delay is visible on the display.
- Press F6 to acknowledge this value.

### **Edit start delay:**

The start delay is the time between the release of the egg pressure switches and the restart of the egg-collecting conveyor. When this start delay is too short the egg-collecting conveyor stops and starts too often. When this timer is too long, the packer stops once in a while because it takes too long before eggs are present in all gates.

### **Edit stop delay:**

The stop delay is the time between the activation of the egg pressure switches and the stop of the egg-collecting conveyor. When this stop delay is too short, the egg-collecting conveyor stops just after an egg has touched the pressure control switch. When this timer is too long, too many eggs enter the infed conveyor causing too much pressure on the gates.



## SERVICE MENU SET REPETITION DENESTER

When the denester attempted to place a tray on the output conveyor, but no tray was detected on this conveyor, the denester repeats a number of times trying to place a tray on the conveyor before sending an alarm message to the display (denester fault, no tray out). The amount of repetitions the denester makes is set with this parameter.

Press F6 to be able to change the value of the parameter.

Pressing F3 resets the number of repetitions to 0.

Pressing F4 increases the number of repetitions.

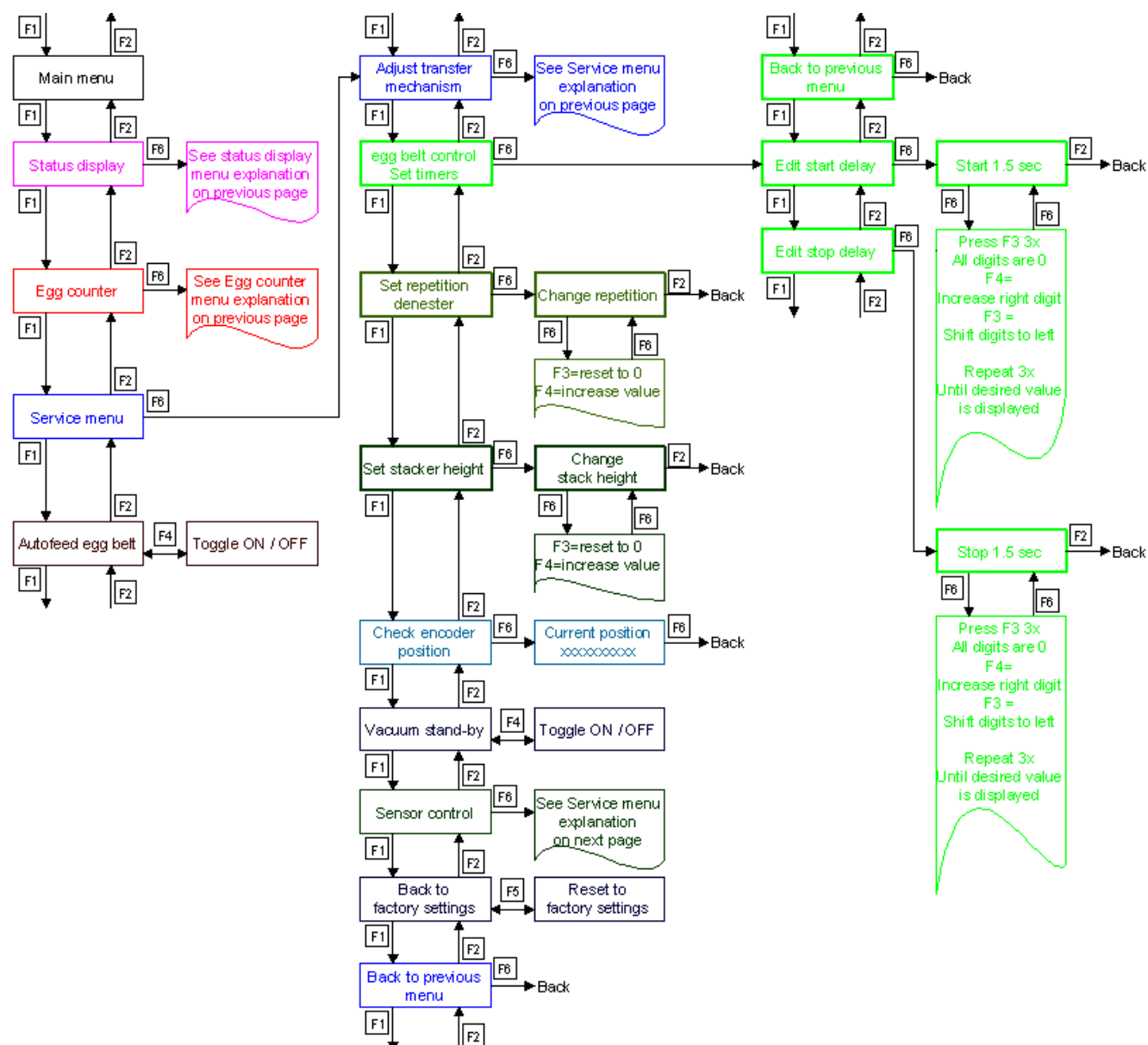
## SERVICE MENU SET STACKER HEIGHT

This menu is used to set the stacker height for the optional automatic tray stacker. The amount of trays this stacker stacks is adjustable with this parameter.

Press F6 to be able to change the value of the parameter.

Pressing F3 resets the number of trays to 0.

Pressing F4 increases the stacked number of trays.



## SERVICE MENU SENSOR CONTROL

In this menu it is possible to disable the use of certain sensors. The system remains running without the use of a disabled sensor. Switch a sensor ON or OFF by pressing F4.

After switching the system OFF and ON again, the sensors are enabled again!

### Detection cell jumpers:

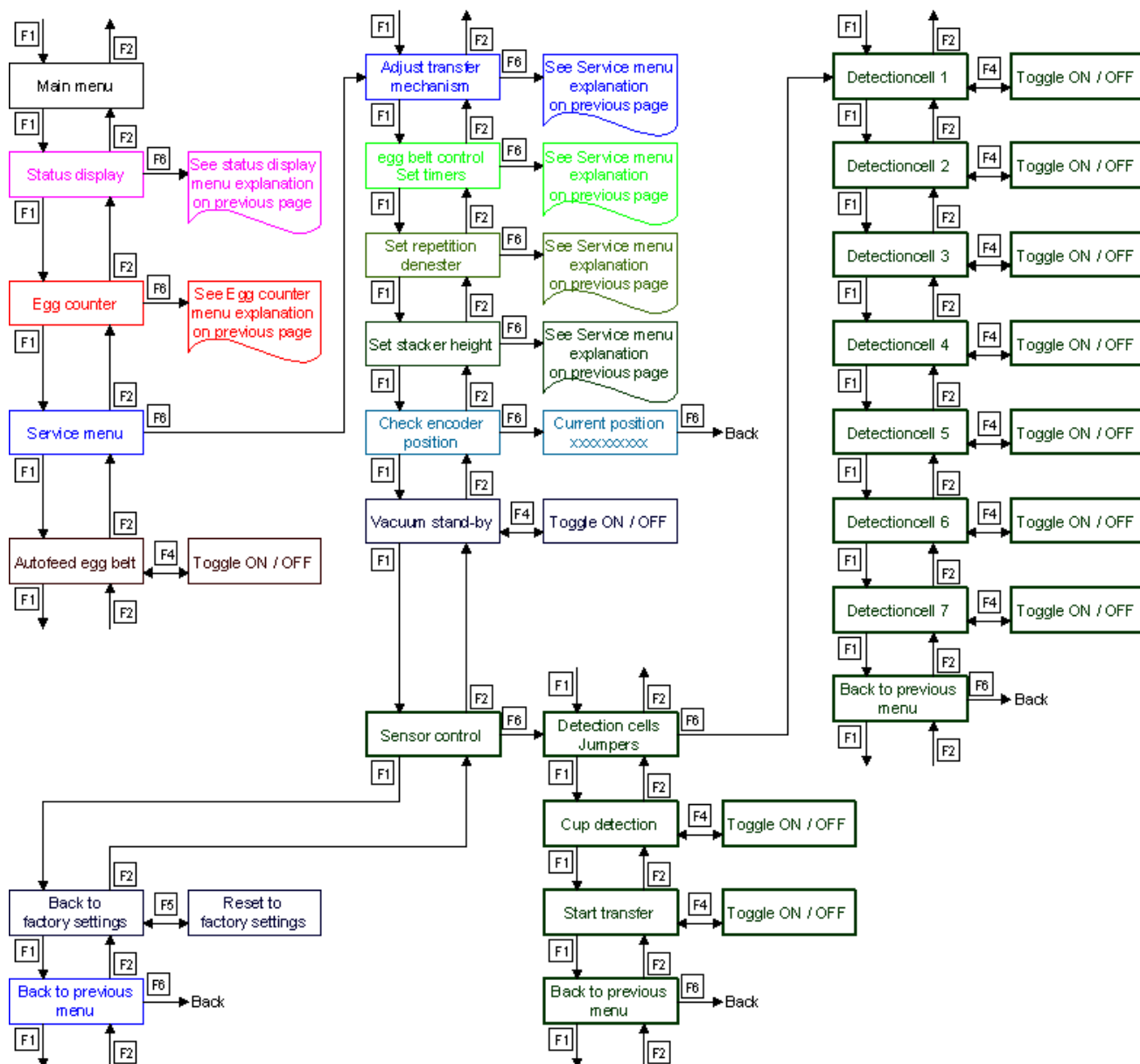
With this function it is possible to switch off an egg detection sensor above an infeed gate. The roller track starts running even when no egg is present in the corresponding gate. Select the appropriate sensor by pressing F6 and afterwards F1 or F2. Switch the sensor ON or OFF by pressing F4.

### Cup detection:

With this function it is possible to switch off the cup detection sensor. In that case the system does no longer check the correct transfer of eggs from roller track to cup conveyor.

### Start transfer:

With this function it is possible to switch of the start transfer sensor. In that case the transfer arm picks-up eggs after every 6 steps of the cup conveyor regardless of the presence of eggs. Eggs left behind on the cup conveyor are not detected and will drop on the floor.







## **4. MAINTENANCE**

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## GENERAL

Only professionals who are familiar with the installation and its operation may perform maintenance, cleaning, repairs and replacement of defective or worn out parts.

When during maintenance questions arise regarding the condition of the system, consult your Prinzen dealer.

In case of difficult or special repairs consult your Prinzen dealer.

Inspections must be carried out before, during and after operation of the machine. Mechanical flaws, such as loose bolts and ball bearings must be repaired upon discovery.

The operator is responsible for noticing and locating abnormal noises and other unusual signs indicating flaws. If the operator cannot locate the flaw, he must stop the installation and inform his superior.

Take preventive actions against vermin as they may cause failures to the electrical cables and such.

## SAFETY REGULATIONS

Before starting operation, cleaning, maintaining the system or before remedying breakdowns first read the chapters **Introduction** and **Safety**.

## MAINTENANCE UTENSILS

In general we advise to have the following tools available for maintenance of the Prinzen systems:

- Padlock.
- Vacuum cleaner.
- Compressed air.
- Plastic scraper.
- Moistened cloth
- Water and neutral soap.
- Lubricants.
- Set of Allen keys.
- Set of wrenches.
- Set of screwdrivers.



### **NOTE!**

Use H1 classified lubricants. These lubricants are approved to use in the food processing industry.



### **TIP!**

Prinzen uses Interflon Fin Food Lube Teflon spray and Griffon HR260 Silicone spray



### **ATTENTION!**





When you want to use different types of lubricants than the lubricants used by Prinzen, make sure that these lubricants do not form a harmful product when contacting the lubricants used by Prinzen.




## **GENERAL CLEANING PROCEDURE**

Before actually starting to clean the system, first follow below steps:

- See to it that all eggs are removed by letting the machine run empty.
- Switch off the system and secure it against accidental switching on.
- Clean the complete system with compressed air, a vacuum cleaner and a plastic scraper.
- Remove persisting scrap with a moistened cloth.
- Check the condition of the system during cleaning.

	<p><b>CAUTION!</b></p> <p>When using warm water to moisten a cloth, make sure the temperature of the water is below 45°C. Above this temperature it is possible to incinerate body parts.</p>
	<p><b>ATTENTION!</b></p> <p>Do not use abrasive cleaning detergents or utensils on non-longwearing parts.</p>
	<p><b>ATTENTION!</b></p> <p>Do not use aggressive cleaning products. Use cleaning product with a PH value between 6 and 8.</p>
	<p><b>ATTENTION!</b></p> <p>The system is NOT designed for wet cleaning. Do NOT clean the system with water and certainly NOT with a high spraying pistol. Only use moistened cloths for cleaning. Do NOT clean bearings, printers, robots, electrical parts and pneumatic parts with water.</p>

Perform the cleaning according the advices and intervals as described in the **Preventive maintenance instructions** further on in this chapter.

	<p><b>TIP!</b></p> <p>The cleaning advices and intervals described in this manual are general. For your specific products and production process the cleaning schedule may need alteration. During the first production months observe the performance of the system and the influence of contamination on the product quality and production process and (if necessary) change the cleaning methods and schedules.</p>
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## GENERAL MAINTENANCE PROCEDURE

Before actually starting to maintain the system, first follow below steps:

- See to it that all eggs and trays are removed by letting the machine run empty.
- Switch off the system and secure it against accidental switching on.
- Perform the maintenance.
- Check the condition of the system during maintenance.



### **TIP!**

All motors are provided with lifetime lubrication and require no lubrication.



### **TIP!**

All bearings are sealed and lubricated for life and require no lubrication.

Perform the maintenance according the advices and intervals as described in the **Preventive maintenance instructions** further on in this chapter.



### **TIP!**

The maintenance advices and intervals described in this manual are general. For your specific products and production process the maintenance schedule may need alteration. During the first production months observe the performance of the system and the influence of the maintenance and (if necessary) change the maintenance methods and schedules.

## AFTER MAINTENANCE

When the maintenance duties are finished, ensure the following:

- All fasteners are secure.
- All safety covers are in place and safety doors are closed.
- All tools and cleaning utensils are removed from the system.
- The system is absolutely dry before putting it back into operation.
- Moving parts that have been cleaned are lubricated.
- Excess lubricant is removed.
- The system is tested before starting production.

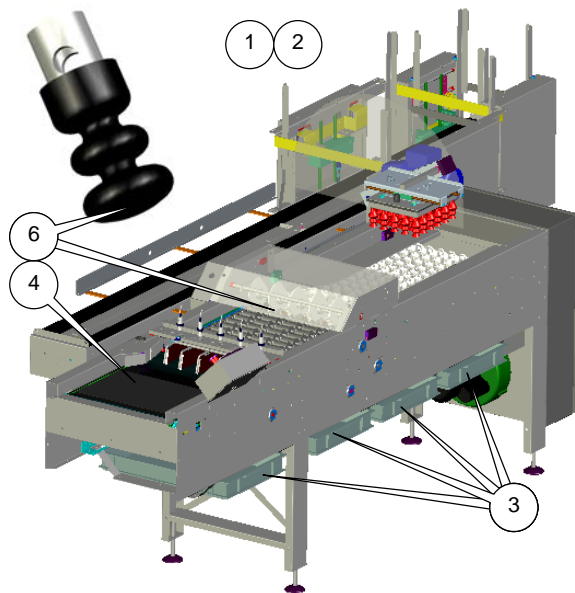


### **NOTE!**

Residues of lubricant must be discharged as chemical waste.

## PREVENTIVE MAINTENANCE INSTRUCTIONS

### DAILY MAINTENANCE



	Daily Maintenance:	Interval (hours):	h
1	Observe for abnormal sounds, vibrations and heat	8	
2	Remove all dirt, grease and feathers from the system	8	
3	Clean the drip trays with water (4x)	8	
4	Clean the infeed conveyor with a moistened cloth.	8	
5	Drain off water separator air regulator	8	
6	Dap the optional stamps with a paper towel.	8	



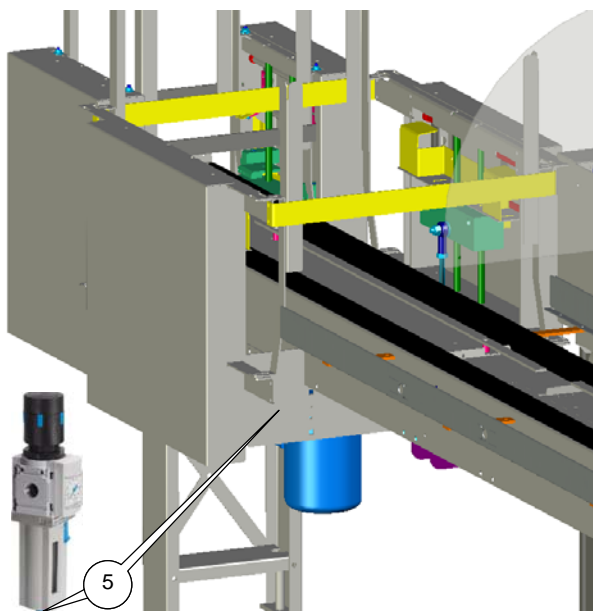
#### TIP!

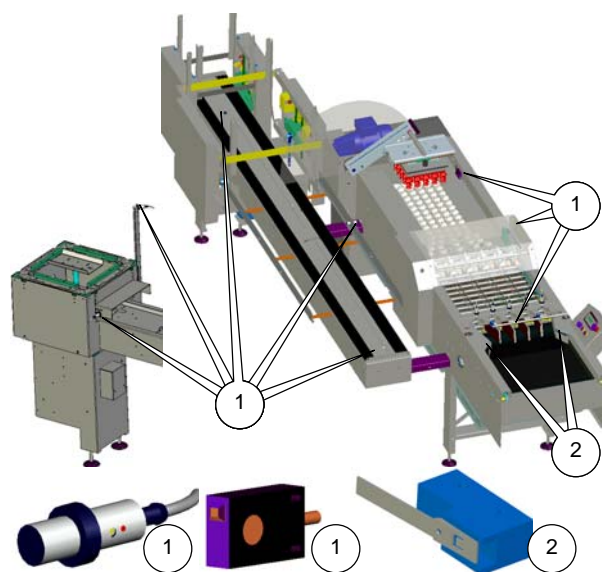
Depending on your specific production circumstances dab the stamps with a paper towel before, during and after using the stamping unit.



#### TIP!

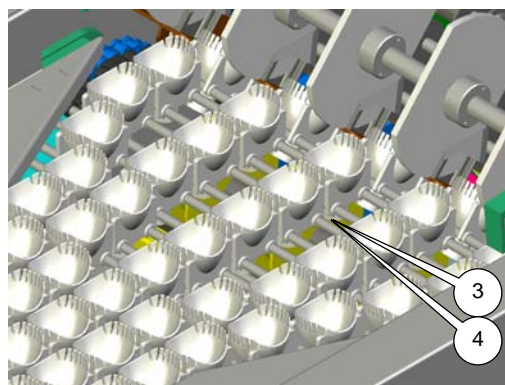
Do not store the stamps and ink into a room with a temperature below 12°C. Below this temperature, the ink becomes syrupy resulting in bad coding on the eggs.





## WEEKLY MAINTENANCE

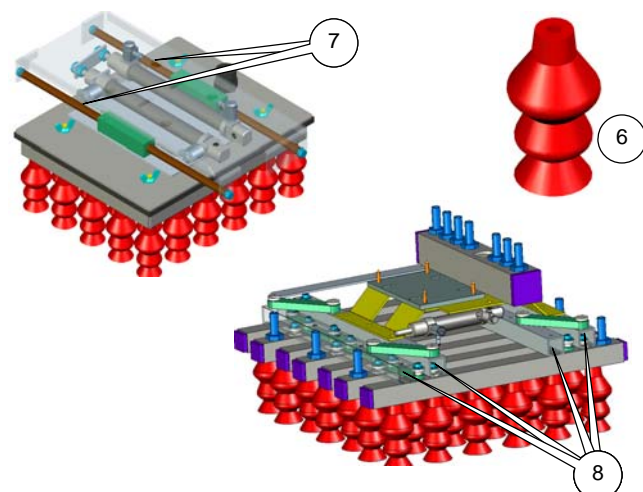
	Weekly Maintenance:	Interval (hours):	h
1	Clean sensors with a moistened cloth	40	
2	Check the functionality of the egg pressure switches.	40	
3	Clean the transporting shafts of the cups.	40	
4	Apply silicon spray on the transporting shafts of the cups	40	
5	Check the functionality of the emergency button.	40	
6	Check the suction cups for damages	40	
7	Apply silicon spray to the horizontal movement guides of the combination vacuum head (2x)	40	
8	Apply silicon spray into the guide rails of the zigzag vacuum head (4x)	40	

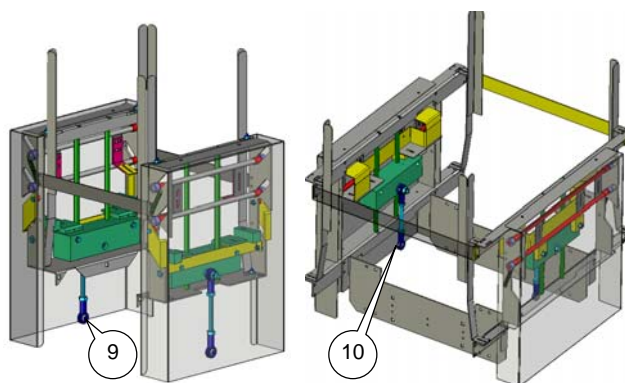


### NOTE!

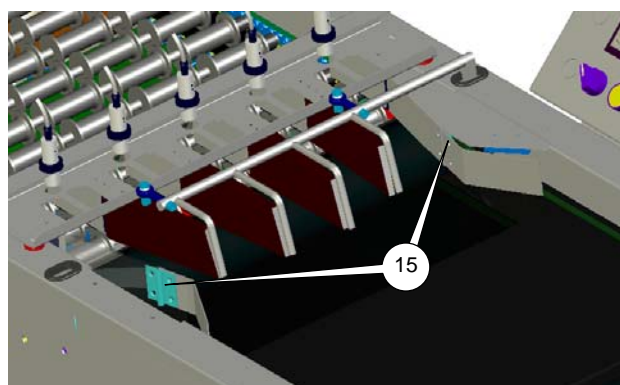
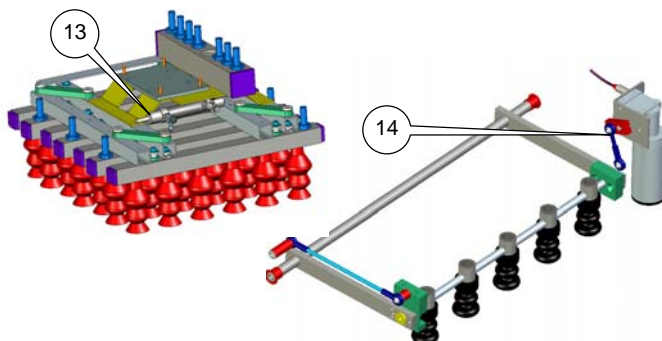
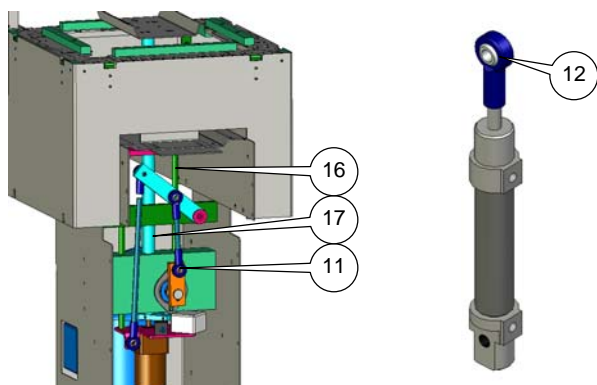
Keep cups of cup conveyor free of lubricants to prevent contamination of the eggs.

Emergency Stop !  
Unlock button and p

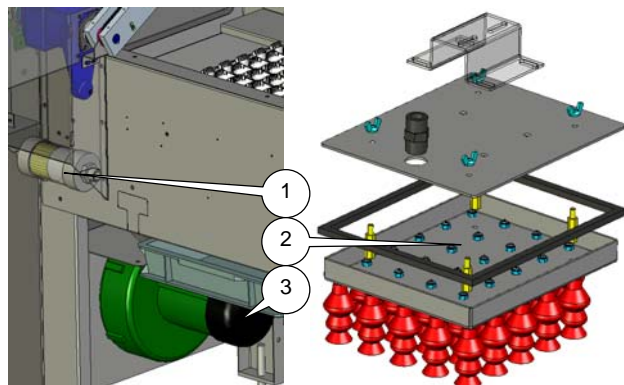




	Weekly Maintenance:	Interval (hours):	h
9	Apply Teflon spray on rod ends 30 cell tray denester (4x)	40	
10	Apply Teflon spray on rod ends hatch tray denester (4x)	40	
11	Apply Teflon spray on rod ends easy stacker (4x)	40	
12	Apply Teflon spray on rod end egg pattern device	40	
13	Apply Teflon spray on rod end zigzag vacuum head	40	
14	Apply Teflon spray on rod ends stamping unit (4x)	40	
15	Apply Teflon spray on the hinge points egg pressure switches (2x)	40	
16	Apply silicon spray to the easy stacker up/down guide (2x).	40	
17	Apply silicon spray to the easy stacker lift up/down/rotating shaft	40	

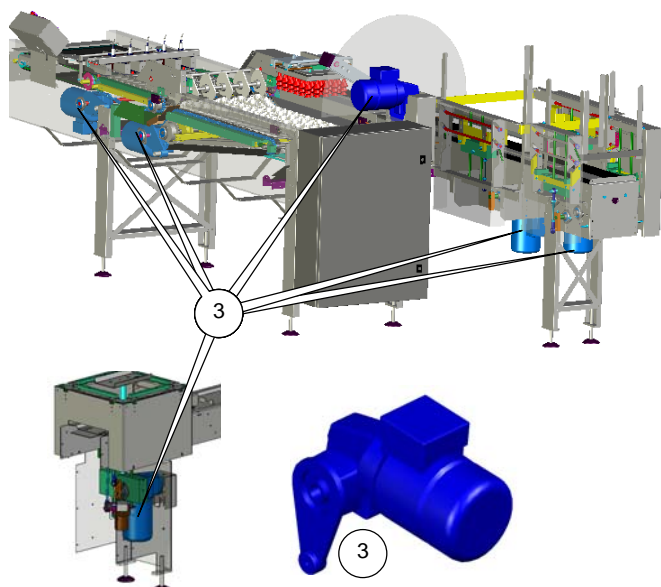






## MONTHLY MAINTENANCE

	Monthly Maintenance:	Interval (hours):	h
1	Check vacuum filter and replace if necessary		200
2	Clean the inside of the vacuum head with compressed air		200
3	Clean all motor fans with compressed air		200
4	Apply Teflon spray on the cup conveyor transport chains (2x)		200
5	Apply Teflon spray on the roller track transport chains (2x)		200



### CAUTION!

Wear eye protection during cleaning of the vacuum head and motor fans with compressed air.



### TIP!

Use the dedicated oil holes at both sides of the system to lubricate the cup conveyor transport chain and the roller track transport chains.



### TIP!

Only lubricate the roller track transport chain. Make sure the black rubber supporting guides remain free of lubricants. Lubricant on the black rubber supporting guides causes malfunctioning of the rollers.



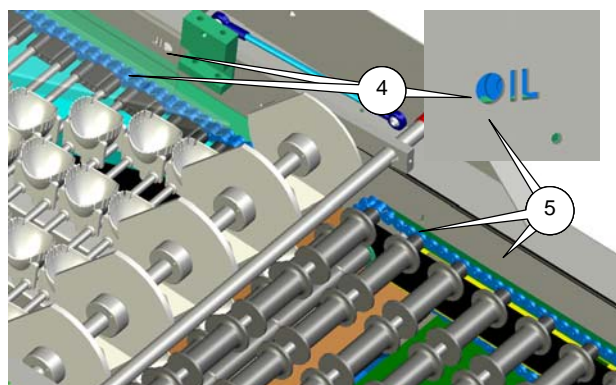
### NOTE!

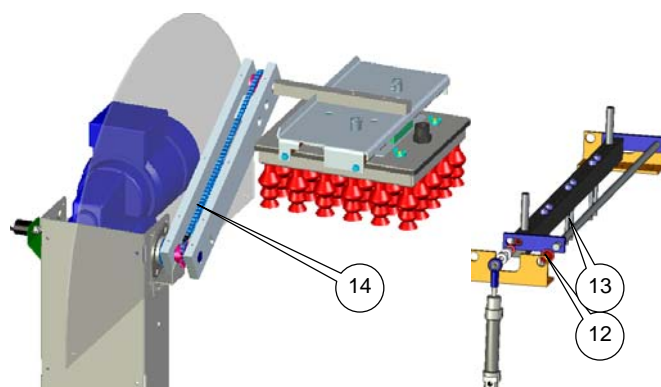
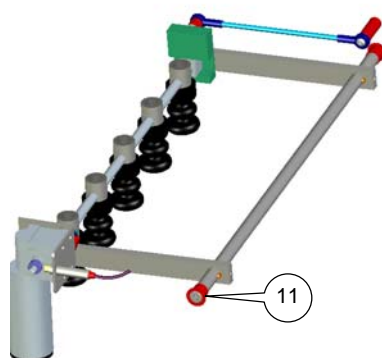
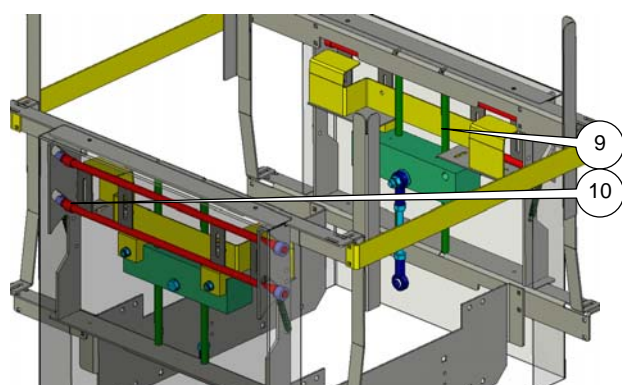
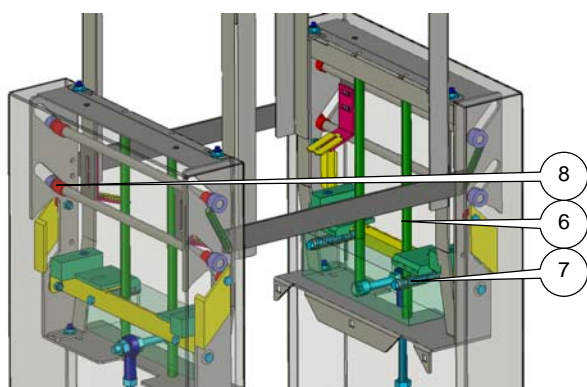
Keep rollers on roller track free of lubricants to prevent contamination of the eggs.



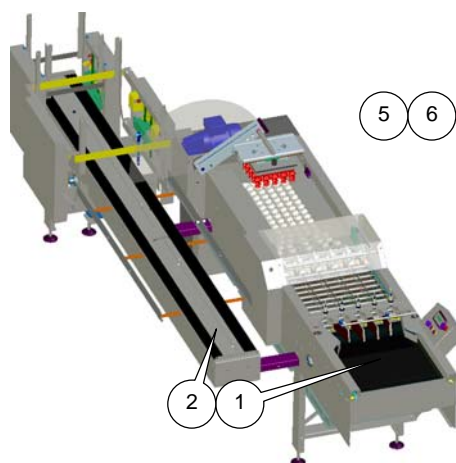
### NOTE!

Keep cups of cup conveyor free of lubricants to prevent contamination of the eggs.



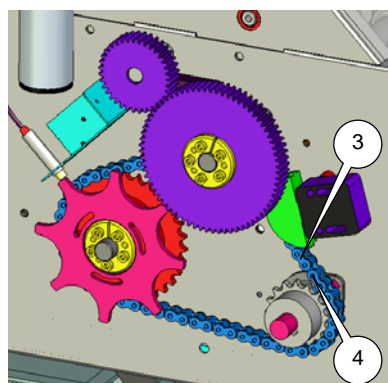


	Monthly Maintenance:	Interval (hours):	h
6	Apply silicon spray to the 30-cell tray denester block up/down guide (4x)		200
7	Apply silicon spray to the 30-cell tray denester lower grippers in/out guides (4x)		200
8	Apply silicon spray on the 30-cell tray denester upper grippers plain bearings (8x).		200
9	Apply silicon spray to the hatch tray denester block up/down guide (4x).		200
10	Apply silicon spray on the hatch tray denester upper grippers plain bearings (8x)		200
11	Apply silicon spray to the stamping unit plain bearings (2x)		200
12	Apply silicon spray on the egg pattern device plain bearings (4x)		200
13	Apply Teflon spray on the egg pattern device blocking shafts.		200
14	Check chain tension of the transfer lever		200



## 1/2 YEARLY MAINTENANCE

	1/2Yearly Maintenance:	Interval (hours):	h
1	Check the infeed conveyor belt tension		1200
2	Check the output conveyor belt tension		1200
3	Check the main drive chain for wear		1200
4	Apply Teflon spray on the main drive chain		1200
5	Check all bearings for wear		1200
6	Check complete system for loose parts, bolts, nuts,..etc		1200

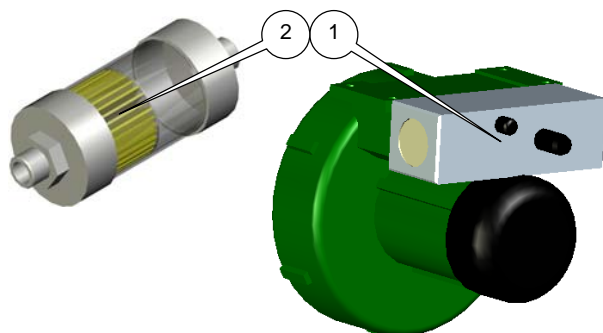


### TIP!

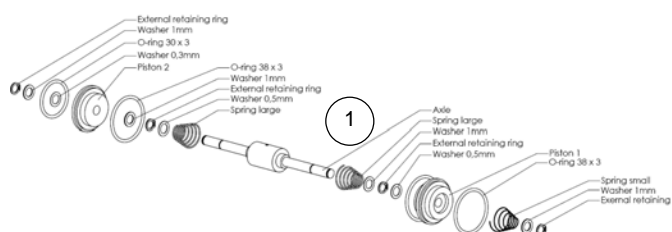
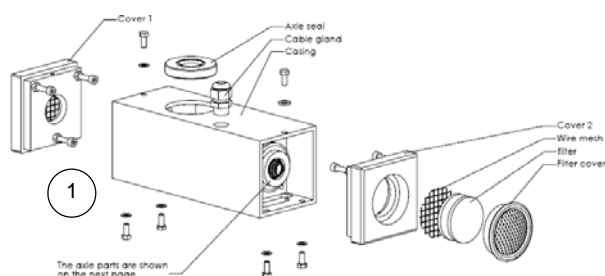
When the yellow part on the chain tensioner becomes visible, replace the main drive chain.



## YEARLY MAINTENANCE



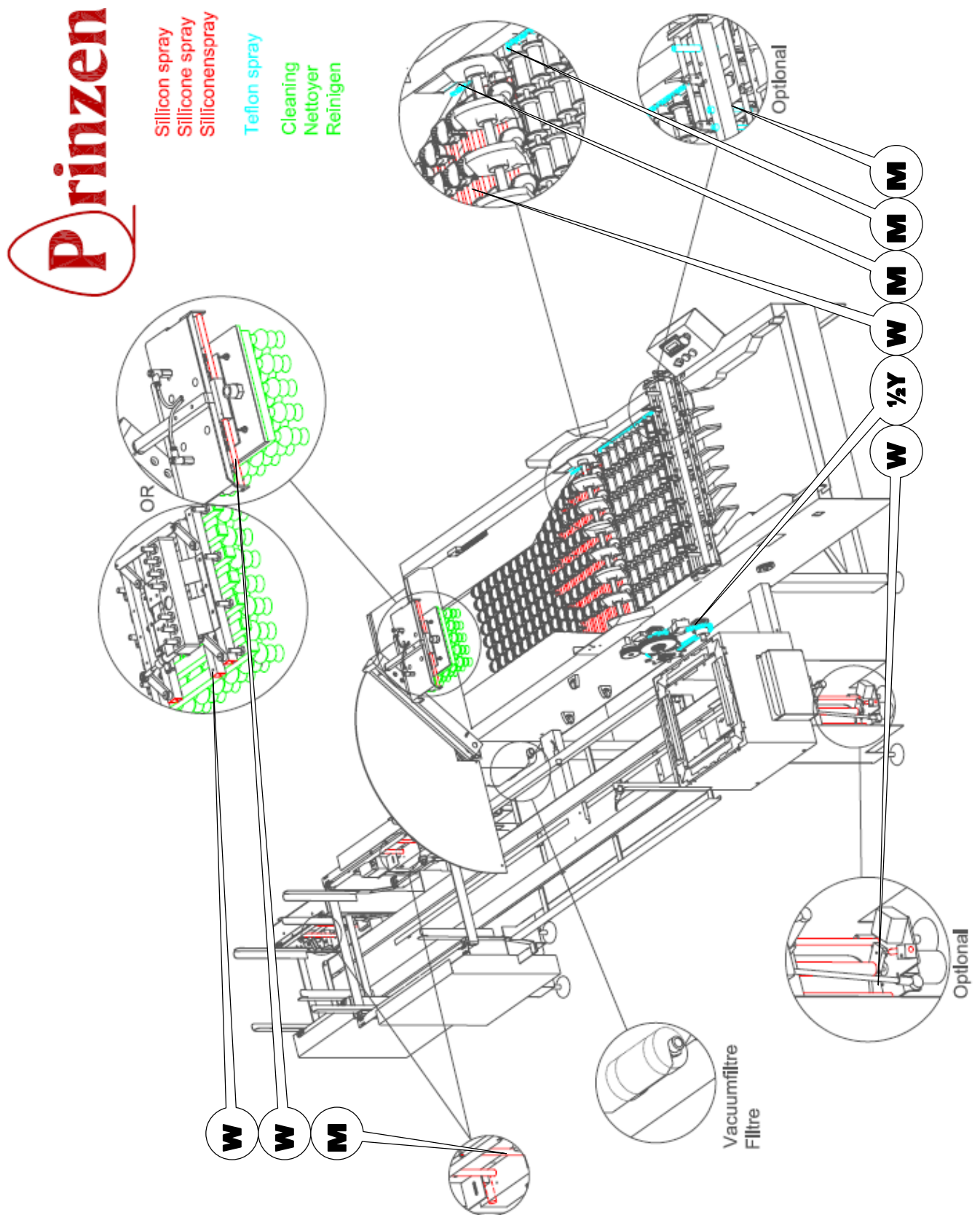
	Yearly Maintenance:	Interval (hours):	h
1	Replace seals in vacuum valve (use replacement set)	2400	
1	Replace vacuum filter	2400	



**TIP!**  
See Service manual for replacement procedure vacuum valve seals.



## LUBRICATION DIAGRAM



Silicon spray  
Silicone spray  
Siliconenspray

## Silicone spray

## Siliconenspray

## Teflon spray

## Cleaning

Nettoyer

## Reinigen

Optional

**M**

M

M

W

Y

## Optional

Vacuumfilter  
Filter

Filter

W

W

**M**





## **5. SPARE PARTS**

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## LIST WITH RECOMMENDED SPARE PARTS

	Description	Type / Remarks	Article code
1	Cup		220 070 001
2	Suction cup		350 010 001
3	Fuse 2A slow 5x20mm		800 040 104
3	Fuse 2A slow 6x35mm	Single phase system only (CSA)	800 040 150
4	Fuse 5A FF 5x20mm		800 040 121
4	Fuse 5A slow 6x35mm	Single phase system only (CSA)	800 040 151
5	Fuse 6A slow 10x38mm	Single phase system only (CSA)	800 040 153
6	Fuse 2A slow 10x38mm	Single phase system only (CSA)	800 040 152
7	Vacuum filter		780 030 030
8	Photocell transmitter	ET5505 1384	800 010 038
9	Photocell receiver	ET5505PPAP 1384	800 010 037
10	Photocell	PA18CSD04PASA	800 010 029
11	Proximity switch	E2A-M12LS04WP-B1	800 010 027
12	Lamp bulb	BA92 30V-2W	800 030 451
13	Bearing	ASPFL 204	700 050 014
14	Bearing	6204 2Z	700 050 023
15	Bearing	626 2Z	700 050 009
16	Vacuum tube	PU 61021 (25mm)	500 011 016
17	Pneumatic air tube	PUN 6 DUO	500 011 023
18	Valve		500 070 017
19	Revision kit vacuum valve		780 030 037
20	Cup conveyor transport chain		705 050 028
21	Roller track transport chain		705 050 021
22	Cup shaft block		220 070 003







## 6. OVOPRINT

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**Ovoprint A1**  
**Ovoprint A5**  
**Ovoprint A6**  
**Ovoprint A7**

## **INSTRUCTIONS**

Be sure that the printer is fitted on to a stable surface in a reasonably dust free environment. Be sure to use a clean and dust free place to store the cartridges after use.

Do not place printer near any source of direct heat. The room temperature should be between 4°C and 35°C.

The printer and ink cartridges must be kept dry at all times.

Clean the printer and print head with a dry and dust free d.

**When connecting or replacing cables, plugs, print heads and/or switches, the power supply MUST be turned off.**

## INSTALLATION

Place the printer tightly on the packer and make secure.



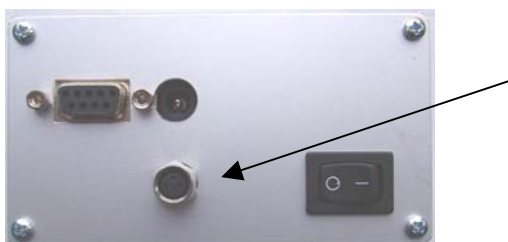
Be sure that the print head is placed between 2 eggs.



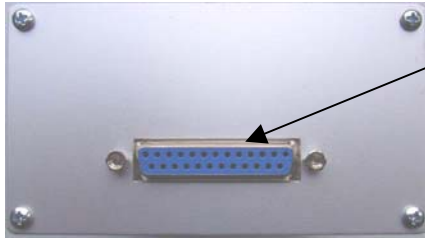
Install the proximity switch for the start signal.



Install the connector for the proximity switch in the CPU.

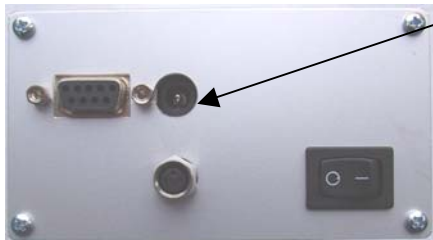


Install the print heads data cable.



Check once again if the cables are not hanging loose. If applicable, use cable ties. Check if all pin plugs are installed properly. The cable of the proximity switch for the start signal and the power feed cable must be kept separated.

Install the supply voltage DC.



## OPERATION

Ensure that the ink cartridges are clean and dry, and that is no ink leakage. Place the cartridge in the holder.



Switch on the printer, using the button on the side of the CPU.



After 2 seconds, the display shows: row 1; the code that will be printed.



The printer will now print message number 1. To print message number 2, touch 02 on the keyboard, for message number 3, touch 03, etc.

Once printing is finished, switch off the printer. You may then click the cartridge out of the holder by gently pressing the lock-clip upwards and remove the cartridge. Clean the cartridge and place it in the synthetic cartridge holder provided.

## CHANGING SETTINGS

\* # = Menu

In the entire menu \* stands for: Back, escape or cursor to left.  
The # stands for: OK, confirm, or cursor to right.

By touching the \* followed by # it is possible to get into the menu. There you may change the print text, save it under another number or change the font.

## SETTING TEXT

Press \* followed by # to access the submenu.

Now press 1, 'print text'. The display asks in which row you would like to record the text.  
(The program allows you to program 50 texts or rows.)

The first text you record in row 01, by pressing 01 and confirming with #.

Now you can set the text. For example: 2-NL-1234501.

This is done as follows:

Press:

2#, 0 twice to note a dash. Confirm with #.

3 times 6 to note the N. Confirm with #.

4 times 5 to note the L. Confirm with #.

2 times 0 to note the dash. Confirm with #.

Now you press 1#, 2#, 3#, 4#, 5#, 0#, 1#.

For returning to the menu, press \* twice.

Now the printer will print the following text in row 01: 2-NL-1234501.

A second text, e.g.: 1-NL-9876502, must be recorded under row 02; \* # 1 followed by 02 and then confirming 02 with #. Now you can set the text.



'1' = 1 X < = > \_ \* # ^ □ /

'2' = 2 A B C a b c

'3' = 3 D E F d e f

'4' = 4 G H I g h i

'5' = 5 J K L j k l

'6' = 6 M N O m n o

'7' = 7 P Q R S p q r s

'8' = 8 T U V t u v

'9' = 9 W X Y Z w x y z

'0' = 0 - + . , ? ! \$ @ % & ( ) :

'\*' = Back or Escape

'#' = Ok or Enter

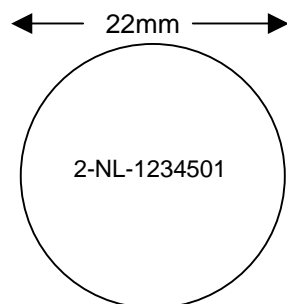


## **SET PRINT LENGTH**

Press \*, followed by # to access the submenu.

Now press 2 "user functions", and press 5 'print length'. Here you can set the desired length of the text in mm. For example; large eggs on 22 mm, and smaller eggs on 18mm length.

The numbers in the display can be overwritten and confirmed with #.

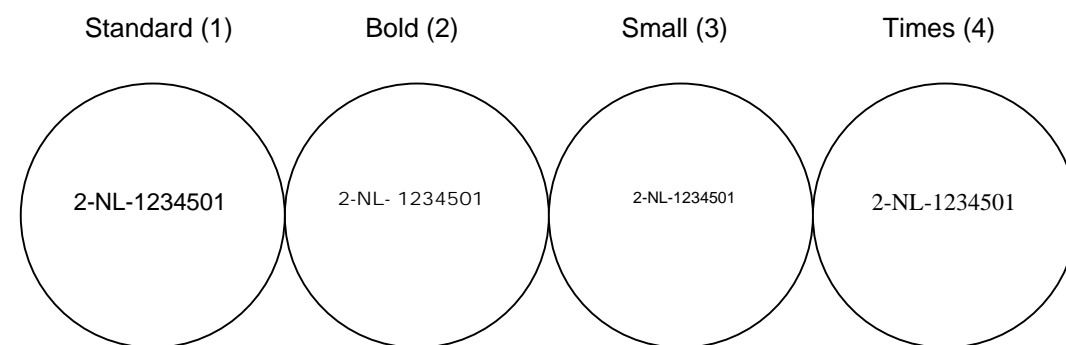


## **SET FONT**

Press \*, followed by # to access the submenu.

Now press 2 "user functions", and press 1 "Font". Now you can choose:

- 1 Standard (normal set-up)
  - 2 Bold (e.g. dark eggs need more ink)
  - 3 Small (preferred for smaller eggs)
  - 4 Times (more ink, other font)
- If a choice has been made, confirm this with #.  
Now press \* 3 times to return to the menu.



## **SETTING OF TWO ROWS**

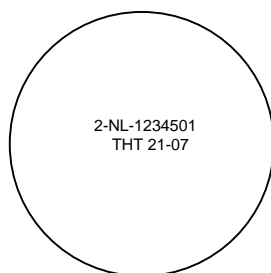
Press \*, followed by # to access the submenu.  
Now press 2 'user functions', and press 2 'Print rows'.  
Now you can choose:

1 One row or, 2 Two rows.  
Press 2 and confirm with #.  
Now press \* 3 times to return to the menu.  
The display now shows 2 different rows. E.g.:

11: 1-NL-1234501  
36: THT 21-07

These texts should be put in row 11:  
1-NL-1234501  
and row 36:  
THT 21-07

These two rows should now work together thus:



## **SET CLEANING TIME**

Press \*, followed by # to access the submenu.  
Now press 2 'user functions', and press 3 'Nozzle cleaning'.  
Now you can set the time in minutes, so the printer will give a start pulse on its own.  
This is a standard notation on 30 minutes and will give a start pulse just once.  
Now press \* 3 times to return to the main menu.

## **SET SHORT KEY**

Press \*, followed by # to access the submenu.  
Now press 2 'user functions', and press 4 'Index print text'.  
Now you can choose:  
1 for 1 number- 1 digit  
2 for 2 numbers- 2 digits  
After making a choice, confirm with # and \* 3 times to return to the menu.  
If the programmed number needs to be changed often, press just a 1 instead of 01.

## **CHANGE PRINTER SETTINGS**

Press \*, followed by # to access the submenu.

Now press 3 'Technician'.

Display asks for a Pin code.

You can get a pin code from your dealer to access the change of settings.

**Warning! Incorrect settings can cause the printer to malfunction.**

Press pin code.

You are now in the technician menu.

### 1. Basic parameters

1. Device Type
2. Heads/Channel
3. Number prints
4. Sensor

### 2. Print parameters

1. Number of digits
2. Print length
3. Speed
4. Print start
5. Print distance
6. V-scale
7. VP-scale
8. Print direction

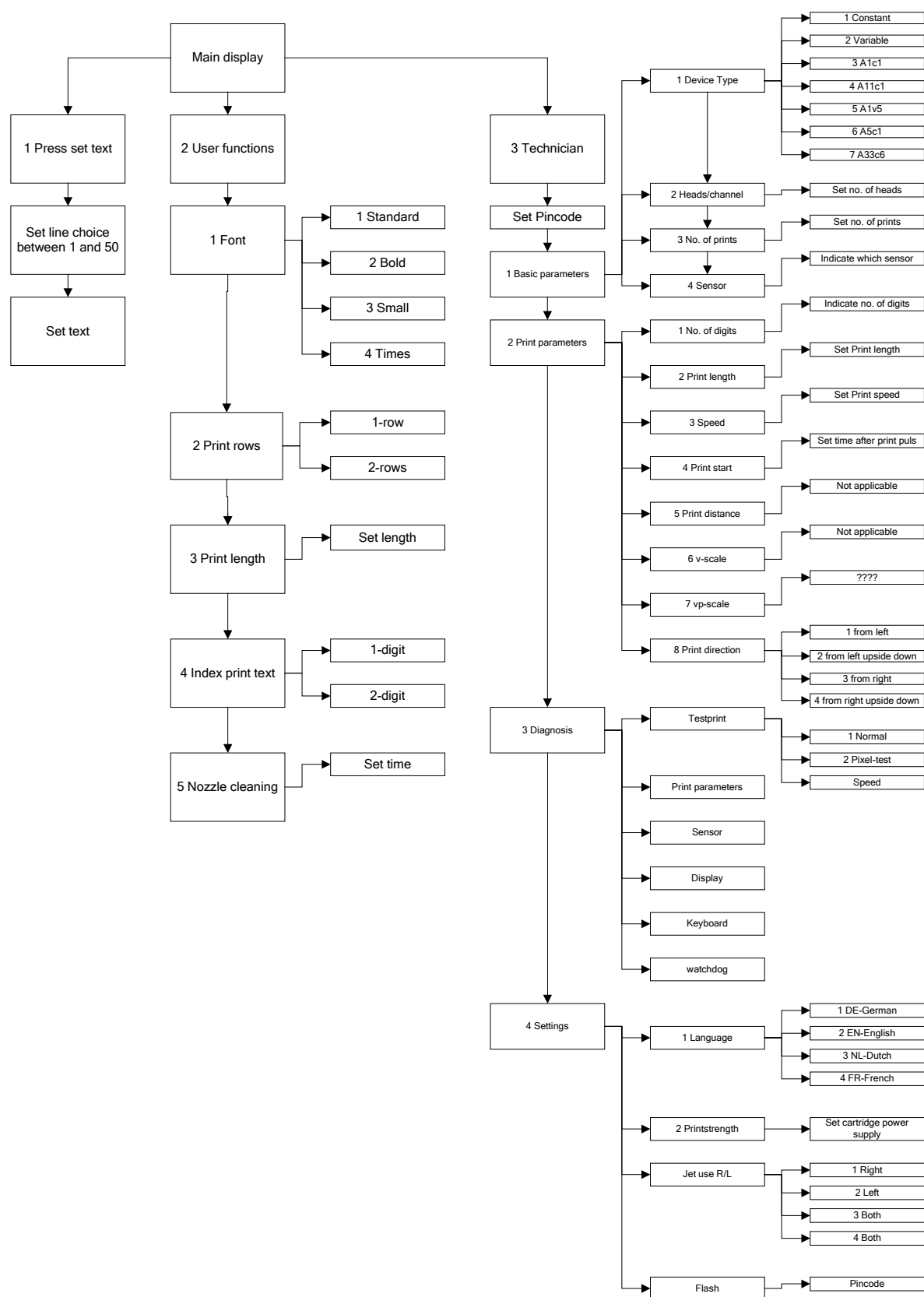
### 3. Diagnosis

1. Test print
2. Print parameters
3. Sensor
4. Display
5. Keyboard
6. Watch-dog
7. Time

### 4. Settings

1. Language
2. Print strength
3. Jet use R/L
4. Flash

## MENU STRUCTURE



## **INK CARTRIDGE**

### **Problem:**

***There is no ink coming out of the cartridge.***

If there is still ink in the cartridge and looks liquefied, it may be that the nozzle of the print head is dehydrated.

### **Solution:**

Put the cartridge with the print head up and sprinkle some drops of Prinzen Cartridge Clean on the print head. Leave the liquid for a few minutes, then dab dry with kitchen tissue.

If this doesn't give you the expected result, leave the cartridge for an hour in a dish with some Prinzen Cartridge Clean. Please note that only the print head should be in the liquid. Other cleaning products may dissolve the components, shortening the life span of the cartridge.

## **PART NUMBERS**

	<b><i>Part Number</i></b>	<b><i>Description</i></b>	
1	790010001	CPU	Steering
2	790010003	Print head	Print head
3	790010009	Print head cable	Cable
4	790010006	Print head divide cable	Cable
5	790010002	Feeding 24V	Feeding
6	895030006	Ink cartridge (red)	Cartridge
7	895030003	Ink cartridge (Dark blue)	Cartridge
8	800010027	Proximity switch	Proximity Switch
<b>OvoPrint A1</b>			
9	790010004	Print head with photocell	Print head
10	790010005	Print head cable A1	Cable